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FIRST LINES

OF THE

PRACTICE OF PHYSIC.

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PRACTICE OF PHYSIC.

BY

WILLIAM CULLEN, M. D.

LATE PROFESSOR OF THE PRACTICE OF PHYSIC IN THE
UNIVERSITY OF EDINBURGH, &c. &c.

IN FOUR VOLUMES.

WITH PRACTICAL AND EXPLANATORY NOTES,

BY

JOHN ROTHERAM, M. D.

VOL. I.

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ADVERTISEMENT.

THE Character of DR CULLEN's *Firſt Lines of the Practice of Phyſic* is ſufficiently eſtabliſhed; and its intrinſic value has been long acknowledged by practitioners of every denomination.

The original intention of this work was to ſerve as a text-book or baſis for the ingenious and experienced Author's Lectures in the Practical Chair of the Univerſity of Edinburgh. But, as the Author is now deceaſed, and the book is ſought after with avidity by ſtudents, who can no longer have an opportunity of hearing the Doctor's explanatory obſervations, Notes explaining abſtruſe points, and accommodating young practitioners with the formulae and doſes of medicine, which are mentioned in the text only in general terms, have been added to this edition.

A ſtrict attention has been paid to print the Author's Text *verbatim* from the laſt edition publiſhed before his death.

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ERRATA.

Page 18. note, line 3. *for* 1793 *read* 1693.
64. note, line ult. *for* emolient read emollient.

THE AUTHOR's

PREFACE

TO THE LAST EDITION PUBLISHED BEFORE HIS DEATH.

TO deliver a Syſtem of the Doctrines and Rules proper for directing the Practice of Phyſic, is an undertaking that appears to me to be attended with great difficulty; and, after an experience of more than forty years in that practice, as well as after much reading and reflection, it was with great diffidence that I ever entered upon ſuch a work. It was, however, what ſeemed to be my duty as a Profeſſor that induced me to make the attempt; and I was engaged in it by the ſame ſentiments that the illuſtrious

Dr Boerhaave has expreſſed in the following paſſage of the Preface to his inſtitutions: *Simul enim docendo admotus eram ſenſi, propriorum cogitatorum explicatione docentem plus proficere, quam ſi opus ab alio conſcriptum interpretari ſuſcipit. Sua quippe optime intelligit, ſua cuique prae caeteris placent, unde clarior ſere doctrina, atque animata plerumque ſequitur oratio. Qui vero ſenſa alterius exponit, infelicius ſaepenumero eadem aſſequitur; quumque ſuo quiſque ſenſu abundat, multa refutanda frequenter invenit, unde gravem fruſtra laborem aggravat, minuſque incitata dictione utitur.* It is well known, that a Text-book is not only extremely uſeful, but neceſſary to ſtudents who are to hear Lectures: And from the ſame conſiderations that moved Dr Boerhaave, I alſo wiſhed to have one for myſelf; while, at the ſame time, from ſome peculiar circumſtances in my ſituation, I had ſome additional inducements to undertake ſuch a work.

Before I was eſtabliſhed as a Profeſſor of the Practice of Phyſic in this Univerſity, I had been employed in giving Clinical Lectures in the Royal Infirmary; and upon that occaſion had delivered, what, in my own opinion, ſeemed moſt juſt with regard to both the nature and the cure of the diſeaſes of which I had occaſion to treat. But I ſoon found that my doctrines were taken notice of as new, and peculiar to myſelf; and were accordingly ſeverely criticiſed by thoſe who, having long before been trained up in the ſyſtem of Boerhaave, had continued to think that that ſyſtem neither required any change, nor admitted of any amendment. I found, at the ſame time, that my doctrines were frequently criticiſed by perſons who either had not been informed of them correctly, or who ſeemed not to underſtand them fully; and therefore, as ſoon as I was employed to teach a more complete ſyſtem of the Practice of Phyſic, I judged it neceſſary to publiſh a Text book, not only for the benefit of my hearers, but that I might alſo have an opportunity of obtaining the opinion of the Public more at large, and thereby be enabled either to vindicate my doctrines, or be taught to correct them. Theſe were the motives for my attempting the Volumes I formerly publiſhed; and now, from many years experience of their utility to my hearers, as well as from the favourable reception they have met with from the Public, I am induced to give a new edition of this Work, not only as I hope, more correct in many parts, but alſo more complete and comprehenſive in its general extent.

At the firſt publication of this Work, it was intended chiefly for the uſe of thoſe Gentlemen who attended my Lectures; although, even then, for the reaſons I have mentioned, it was rendered more full than Text-books commonly are; and, in the repeated editions I have ſince had occaſion to give, I have been conſtantly endeavouring to render it more full and comprehenſive. In theſe reſpects, I hope the preſent Edition will appear to be rendered more fit for general uſe, and better calculated to afford ſatisfaction to all thoſe who think they may ſtill receive any inſtruction from reading on this ſubject.

While I thus deliver my Work in its new more improved ſtate, with the hopes that it may be of uſe to others as well as to thoſe who hear my Lectures, I muſt at the ſame time obſerve, that it preſents a ſyſtem which is in many reſpects new; and therefore I apprehend it to be not only proper, but neceſſary, that I ſhould explain

plain here upon what grounds, and from what conſiderations, this has been attempted.

In the firſt place, I apprehend that, in every branch of ſcience with reſpect to which new facts are daily acquired, and theſe conſequently giving occaſion to new reflections, which correct the principles formerly adopted, it is neceſſary, from time to time, to reform and renew the whole ſyſtem, with all the additions and amendments which it has received and is then capable of. That at preſent this is requiſite with regard to the ſcience of Medicine, will, I believe, readily occur to every perſon who at all thinks for himſelf, and is acquainted with the Syſtems which have hitherto prevailed. While, therefore, I attempt this, I think it may be allowable, and upon this occaſion even proper, that I ſhould offer ſome remarks on the principal Syſtems of Medicine which have of late prevailed in Europe, and that I ſhould take notice of the preſent ſtate of Phyſic as it is influenced by theſe. Such remarks, I hope, may be of ſome uſe to thoſe who attempt to improve their knowledge by the reading of books.

Whether the Practice of Phyſic ſhould admit of reaſoning, or be entirely reſted upon experience, has long been, and may ſtill be, a matter of diſpute. I ſhall not, however, at preſent, enter upon the diſcuſſion of this; becauſe I can venture to aſſert, that, at almoſt all times, the practice has been, and ſtill is, with every perſon, founded more or leſs upon certain principles eſtabliſhed by reaſoning: And therefore, in attempting to offer ſome view of the preſent ſtate of Phyſic, I muſt give an account of thoſe ſyſtems of the principles of the ſcience which have lately prevailed, or may be ſuppoſed ſtill to prevail in Europe.

When, after many ages of darkneſs, which had deſtroyed almoſt the whole of antient literature, learning was again reſtored in the fifteenth century; ſo, from cauſes * which are well

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* At this period the medical knowledge of Europe was chiefly, and, indeed, ſolely, ſuch as had been derived from the Arabians. At the conqueſt of Conſtantinople by the Turks, about the middle of the fifteenth century, ſeveral of the Greeks fled into Italy, and the people of Europe, communicating with them, found them to be intelligent, and

well known, it was the ſyſtem of Galen alone that the Phyſicians of thoſe days became acquainted with; and during the courſe of the ſixteenth century, the ſtudy of Phyſicians was almoſt ſolely employed in explaining and confirming that ſyſtem. Early, indeed, in the ſixteenth century, the noted Paracelſus * had laid

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and ſome of them even learned men : The Europeans were thence led to ſtudy the Greek language, in order to read the valuable books which theſe fugitives had ſo much extolled ; and among other works, thoſe of Galen particularly attracted the notice of the phyſicians, which, to their great aſtoniſhment, contained all the medical knowledge that had been attributed to the Arabians. To the Greek writers, therefore, the phyſicians of thoſe times cloſely applied their attention, thinking theſe books the only true fountains of medical knowledge ; and thus it was that the Galenical doctrines became prevalent all over Europe.

* The remarkable circumſtances in the life of Aureolus Philippus Theophraſtus Bombaſtus Paracelſus de Hohenheim, as he called himſelf, are too numerous for inſertion in the narrow limits allotted to theſe notes. He was born at the village of Einſidlen, about 2 German miles from Zurick, in the year 1493. At 3 years old he was made an eunuch by an accident. He travelled all over the continent of

the foundation of a Chemical Syſtem which was in direct oppoſition to that of Galen; and, by the efficacy of the medicines employed by Paracelſus and his followers, their ſyſtem came to be received by many: But the ſyſtematic Phyſicians continued to be chiefly Galeniſts, and kept poſſeſſion of the Schools till the middle of the ſeventeenth century. It is not, however, neceſſary

of Europe, obtaining knowledge in chemiſtry and phyſic, and then travelled about the country practiſing what he had learned. His chief remedies were opium and mercury, and his great ſucceſs increaſed his celebrity. He cured the famous printer Frobenius of Baſil of an inveterate diſeaſe; this cure brought him acquainted with Eraſmus, and made him known to the magiſtracy of Baſil, who elected him Profeſſor in 1527. He lectured two hours every day. While ſeated in his chair, he burnt, with great ſolemnity, the writings of Galen and Avicenna; and declared to his audience, that if God would not impart the ſecrets of phyſic, it was not only allowable, but even juſtifiable to conſult the devil. He ſoon left Baſil, and continued rambling about the country, generally intoxicated, and never changing his clothes, or even going to bed. He died after an illneſs of a few days, in an inn at Saltſburg, in 1541, in his forty-eighth year, though he had promiſed himſelf that, by the uſe of his elixir, he ſhould live to the age of Methuſalem.

ſary here to enter into any further detail reſpecting the fate of thoſe two oppoſite ſects; for the only circumſtance concerning them, which I would wiſh at preſent to point out, is, that in the writings of both, the explanations they ſeverally attempted to give of the phenomena of health or ſickneſs, turned very entirely upon the ſtate of the fluids of the body.

Such was the ſtate of the ſcience of Phyſic till about the middle of the ſeventeenth century, when the circulation of the blood came to be generally known and admitted; and when this, together with the diſcovery of the receptacle of the chyle, and of the thoracic duct, finally exploded the Galenic ſyſtem. About the ſame period, a conſiderable revolution had taken place in the ſyſtem of Natural Philoſophy. In the courſe of the ſeventeenth century, Galileo had introduced mathematical reaſoning; and Lord Bacon having propoſed the method of induction, had thereby excited a diſpoſition to obſerve facts, and to make experiments. Theſe new modes of philoſophiſing, it might be ſuppoſed, would ſoon have had ſome influence on the ſtate of medicine; but the progreſs of this was ſlow.

The knowledge of the circulation did indeed neceſſarily lead to the conſideration as well as to a clearer view of the Organic Syſtem in animal bodies; which again led to the application of the mechanical philoſophy towards explaining the phenomena of the animal economy; and it was applied accordingly, and continued, till very lately, to be the faſhionable mode of reaſoning on the ſubject. Such reaſoning, indeed, muſt ſtill in ſeveral reſpects continue to be applied: But it would be eaſy to ſhow, that it neither could, nor ever can be, applied to any great extent in explaining the animal oeconomy; and we muſt therefore look for other circumſtances which had a greater ſhare in modelling the Syſtem of Phyſic.

With this view it may be remarked, that, till the period juſt now mentioned, every phyſician, whether Galeniſt or Chemiſt, had been ſo much accuſtomed to conſider the ſtate and condition of the fluids, both as the cauſe of diſeaſe, and as the foundation for explaining the operation of medicines, that what we may term an Humoral Pathology ſtill continued to make a great part of every ſyſtem. In theſe circumſtances it was ſoon perceived, that chemiſtry promiſed a much better explanation than the Galenic or Ariſtotelian philoſophy had done; and, therefore, while the latter was entirely laid aſide, a chemical reaſoning was every where received. Lord Bacon, with his uſual ſagacity, had early obſerved, that chemiſtry promiſed a greater number of facts, and he thereby gave it credit; whilſt the Corpuſcularian philoſophy, reſtored by Gaſſendi, readily united with the reaſonings of the chemiſts; and the philoſophy of Des Cartes readily united with both. From all theſe circumſtances, an Humoral, and chiefly a Chemical Pathology, came to prevail very much till the end of the laſt century; and has indeed continued to have a great ſhare in our ſyſtems down to the preſent time.

It is proper now, however, to obſerve, that about the beginning of the preſent century, when every part of ſcience came to be on a more improved and correct footing, there appeared in the writings of Stahl, of Hoffman, and of Boerhaave, three new, and conſiderably different, Syſtems of Phyſic; which have ever ſince had a great ſhare in directing the practice of it. In order, therefore, to give a nearer view of the preſent ſtate of Phyſic, I ſhall offer ſome remarks upon theſe different ſyſtems; endeavouring to point out the advantages as well as the diſadvantages of each, and how far they ſtill prevail; or, according to my judgement, deſerve to do ſo.

I SHALL begin with conſidering that of Dr Stahl, which I think appeared firſt, and for a long time after was the prevailing ſyſtem in Germany.

THE chief and leading principle of this ſyſtem is, that the rational ſoul of man governs the whole oeconomy of his body. At all times, Phyſicians have obſerved, that the animal oeconomy has in itſelf a power or condition, by which, in many inſtances, it reſiſts the injuries which threaten it; and by which it alſo, on many occaſions, corrects or removes the diſorders induced, or ariſing in it. This power, Phyſicians very antiently attributed, under a vague idea, to an agent in the ſyſtem, which they called NATURE; and the language of a *vis conſervatrix et medicatrix naturae*, has continued in the ſchools of medicine from the moſt antient times to the preſent.

Dr Stahl has explicitly founded his ſyſtem on the ſuppoſition, that the power of nature, ſo much talked of, is entirely in the rational ſoul. He ſuppoſes, that, upon many occaſions, the ſoul acts independently of the ſtate of the body; and that, without any phyſical neceſſity ariſing from that ſtate, the ſoul, purely in conſequence of its intelligence, perceiving the tendency of noxious powers threatening, or of diſorders anywiſe ariſing in the ſyſtem, immediately excites ſuch motions in the body as are ſuited to obviate the hurtful or pernicious conſequences which might otherwiſe take place. Many of my readers may think it was hardly neceſſary for me to take notice of a ſyſtem founded upon ſo fanciful an hypotheſis: But there is often ſo much ſeeming appearance of intelligence and deſign in the operations of the animal oeconomy, that many eminent perſons, as Perrault in France, Nichols and Mead in England, Porterfield and Simſon in Scotland, and Gaubius in Holland, have very much countenanced the ſame opinion, and it is therefore certainly entitled to ſome regard. It is not, however, neceſſary for me here to enter into any refutation of it. Dr Hoffman has done this fully, in his *Commentarius de differentia inter Hoffmanni doctrinam medico mechanicam et G. E. Stahlii medico organicam*; and both Boerhaave and Haller, though no favourers of materialiſm, have maintained a doctrine very oppoſite to that of Stahl.

In my Phyſiology I have offered ſome arguments againſt the ſame; and I ſhall only add now, that whoever conſiders what has been ſaid by Dr Nichols in his *Oratio de Anima Medica*, and by Dr Gaubius in ſome parts of his Pathology, muſt perceive, that the admitting of ſuch a capricious government of the animal oeconomy, as theſe authors in ſome inſtances ſuppoſe, would at once lead us to reject all the phyſical and mechanical reaſoning we might employ concerning the human body. Dr Stahl himſelf ſeems to have been aware of this; and therefore, in his Preface to Juncker's *Conſpectus Therapsiæ Specialis*, has acknowledged, that his general principle was not at all neceſſary; which is in effect ſaying that it is not compatible with any ſyſtem of principles that ought to govern our practice. Upon this footing, I might have at once rejected the Stahlian principle: but it is even dangerous to bring any ſuch principle into view; for, after all Dr Stahl had ſaid in the paſſage juſt now referred to, I find, that, in the whole of their practice, both he and his followers have been very much governed by their general principle. Truſting much to the conſtant attention and wiſdom of nature, they have propoſed the *Art of curing by expectation;* have therefore, for the moſt part, propoſed only very inert and frivolous remedies; have zealouſly oppoſed the uſe of ſome of the moſt efficacious, ſuch as opium and the Peruvian bark; and are extremely reſerved in the uſe of general remedies, ſuch as bleeding, vomiting, &c.

ALTHOUGH theſe remarks, upon a ſyſtem which may now be conſidered as exploded or neglected, may ſeem ſuperfluous; I have been willing to give theſe ſtrictures on the Stahlian ſyſtem, that I might carry my remarks a little farther, and take this opportunity of obſerving, that, in whatever manner we may explain what have been called the operations of nature, it appears to me, that the general doctrine of

Nature curing diſeaſes, the ſo much vaunted *Hippocratic* method of curing, has often had a very baneful influence on the practice of phyſic; as either leading phyſicians into, or continuing them in, a weak and feeble practice; and at the ſame time ſuperſeding or diſcouraging all the attempts of art. Dr Huxham has properly obſerved, that even in the hands of Sydenham it had this effect. Although it may ſometimes avoid the miſchiefs of bold and raſh practitioners, yet it certainly produces that caution and timidity which have ever oppoſed the introduction of new and efficacious remedies. The oppoſition to chemical medicines in the ſixteenth and ſeventeenth centuries, and the noted condemnation of Antimony by the Medical Faculty of Paris, are to be attributed chiefly to thoſe prejudices, which the phyſicians of France did not entirely get the better of for near an hundred years after. We may take notice of the reſerve it produced in Boerhaave, with reſpect to the uſe of the Peruvian Bark. We have had lately publiſhed, under the title of *Conſtitutiones Epidemicæ*, notes of the particular practice of the late Baron Van Swieten; upon which the editor very properly obſerves, That the uſe of the bark, in intermitting fevers, appears very rarely in that practice; and we know very well where Van Swieten learned that reſerve.

I MIGHT go farther, and ſhew how much the attention to the *Autocrateia*, allowed of, in one ſhape or other, by every ſect, has corrupted the practice among all phyſicians, from Hippocrates to Stahl. It muſt, however, be ſufficiently obvious, and I ſhall conclude the ſubject with obſerving, that although the *vis medicatrix naturæ* muſt unavoidably be received as a fact; yet, wherever it is admitted, it throws an obſcurity upon our ſyſtem; and it is only where the importance of our art is very manifeſt and conſiderable, that we ought to admit of it in practice.

To finiſh our remarks upon the Stahlian Syſtem, I ſhall ſhortly obſerve, that it did not depend entirely upon the *Autocrateia*, but alſo ſuppoſed a ſtate of the body and diſeaſes, that admitted of remedies, which, under the power and direction of the ſoul, acted upon the organization and matter of the body, ſo as to cure its diſeaſes. Upon this footing, the Stahlian pathology

thology turned entirely upon Plethora and Cacochymy. It was with reſpect to the former that they eſpecially applied their doctrine of the *Autocrateia* in a very fanatical manner; and, with reſpect to the latter, they have been involved in a humoral pathology as much as the ſyſtematic phyſicians who had gone before them, and with a theory ſo incorrect as not to merit now the ſmalleſt attention. After all, I ought not to diſmiſs the conſideration of the Stahlian Syſtem, without remarking, that as the followers of this ſyſtem were very intent upon obſerving the method of nature, ſo they were very attentive in obſerving the phenomena of diſeaſes, and have given us in their writings many facts not to be found elſewhere.

WHILE the doctrines of Stahl were prevailing in the Univerſity of Halle, Dr Hoffman *, a profeſſor in the ſame univerſity, propoſed a ſyſtem that was very different. He received into his ſyſtem a great deal of the mechanical, Carteſian, and chemical doctrines of the ſyſtems which had appeared before: But, with reſpect to theſe, it is of no conſequence to obſerve in what manner he modified the doctrines of his predeceſſors, as his improvements in theſe reſpects were nowiſe conſiderable, and no part of them now remain; and the real value of his works, beyond what I am juſt now going to mention, reſts entirely on the many facts they contain. The merit of Dr Hoffman and of his work is, that he made, or rather ſuggeſted, an addition to the ſyſtem, which highly deſerves our attention. Of this I cannot give a clearer account than by giving it in the author's own words. In his *Medicina Rationalis Syſtematica*, Tom. III. § 1. chap. 4. he has given his *Genea-*

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* Frederick Hoffman was born at Hall, in the year 1660. He graduated in phyſic in 1681, was made profeſſor of phyſic there in 1793, and filled that chair till his death in 1742. A very remarkable circumſtance of his life is, that he never took fees from his patients, but was content with his ſtipend. He was in high repute as a practitioner, and curing the Emperor Charles VI. and

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Empreſs, and Frederick I. of Pruſſia of inveterate diſeaſes, greatly increaſed his reputation. His works are collected in ſix volumes folio, publiſhed at different times from 1748 to 1754. They abound with many uſeful practical directions; but at the ſame time contain many frivolous remarks, and an abundance of conjectural theory.

logia morborum ex turbato ſolidorum et fluidorum mechaniſmo: and in the 47th and laſt paragraph of this chapter, he ſums up his doctrine in the following words: *Ex hiſce autem omnibus uberius hactenus excuſſis, perquam dilucide apparere, arbitror quod ſolus* SPASMUS *et ſimplex* ATONIA, *æquabilem, liberum, ac proportionatum ſanguinis omniſque generis fluidorum motum, quibus excretionum ſucceſſus et integritas functionum animi et corporis proxime nititur, turbando ac pervertendo, univerſam vitalem œconomiam ſubruant ac deſtruant; atque hinc univerſa pathologia longe rectius atque facilius* EX VITIO MOTUUM MICROSMICORUM IN SOLIDIS, *quam* EX VARIIS AFFECTIONIBUS VITIOSORUM HUMORUM, *deduci atque explicari poſſit, adeoque omnis generis ægritudines internæ, ad* PRÆTERNATURALES GENERIS NERVOSI AFFECTIONES *ſint referendæ. Etenim læſis quocunque modo, vel nervis per corpus diſcurrentibus, vel membranoſis quibuſvis nervoſis partibus, illico motuum anomaliæ, modo leviores, modo graviores, ſubſequuntur. Deinde attenta obſervatio docet, motus quoſvis morboſos principaliter ſedem figere et tyrannidem exercere in nervoſis corporis partibus, cujus generis præter omnes canales, qui ſyſtaltico et diaſtaltico motu pollentes, contentos ſuccos tradunt, univerſum* *nimirum inteſtinorum et ventriculi ab œſophago ad anum canalem, totum ſyſtema vaſorum arterioſorum, ductuum biliariorum, ſalivalium, urinariorum et ſubcutaneorum, ſunt quoque membranæ nerveo-muſculares cerebri et medullæ ſpinalis, præſertim hæc, quæ dura mater vocatur, organis ſenſoriis obductæ, nec non tunicæ illæ ac ligamenta, quæ oſſa cingunt artuſque firmant. Nam nullus dolor, nulla inflammatio, nullus ſpaſmus, nulla motus et ſenſus impotentia, nulla febris aut humoris illius excretio, accidit, in qua non hæ partes patiantur. Porro etiam omnes, quæ morbos gignunt cauſæ, operationem ſuam potiſſimam perficiunt in partes motu et ſenſu præditas, et canales ex his coagmentatos, eorum motum, et cum hoc fluidorum curſum, pervertendo; ita tamen, ut ſicuti variæ indolis ſunt, ſic etiam varie in nerveas partes agant, iiſdemque noxam affricent. Demum omnia quoque eximiæ virtutis medicamenta, non tam in partes fluidas, earum craſin ac intemperiem corrigendo, quam potius in ſolidas et nervoſas, earundem motus alterando ac moderando, ſuam edunt operationem: De quibus tamen omnibus, in vulgari uſque eo recepta morborum doctrina, altum eſt ſilentium.*

It is true that Dr Willis * had laid a foundation for this doctrine, in his *Pathologia Cerebri et Nervorum*; and Baglivi had propoſed a ſyſtem of this kind in his *Specimen de fibra motrici et morboſa*. But, in theſe writers, it was either not extenſively applied to diſeaſes, or was ſtill ſo involved in many phyſiological errors, that they had attracted little attention; and Dr Hoffman was the firſt who gave any tolerable ſimple and clear ſyſtem on the ſubject, or pointed out any extenſive application of it to the explanation of diſeaſes.

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* This illuſtrious phyſician was born at Great Bedwin in Wiltſhire in 1621. He took the degree of Maſter of Arts in 1642 at Oxford, where he was made profeſſor of natural philoſophy in 1660; and that ſame year he took the degree of M. D. His practice was extenſive and ſucceſsful; he was one of the firſt members of the Royal Society in London, whither he removed in 1666; and ſoon made his name as illuſtrious by his writings, as he had already done by his practice. His works had been often printed ſeparately; but they were not collected till after his death, which happened on the 11th of November 1675. One edition was publiſhed at Geneva in 1676, and another at Amſterdam in 1682, both in quarto.

THERE can be no ſort of doubt that the phenomena of the animal œconomy in health and in ſickneſs, can only be explained by conſidering the ſtate and affections of the primary moving powers in it. It is to me ſurpriſing that phyſicians were ſo long of perceiving this, and I think we are therefore particularly indebted to Dr Hoffman for putting us into the proper train of inveſtigation; and it every day appears that phyſicians perceive the neceſſity of entering more and more into this inquiry. It was this, I think, which engaged Dr Kaaw Boerhaave to publiſh his work intitled *Impetum faciens*; as well as Dr Gaubius to give the Pathology of the *Solidum vivum*. Even the Baron Van Swieten has, upon the ſame view, thought it neceſſary, in at leaſt one particular, to make a very conſiderable change in the doctrine of his maſter, as he has done in his Commentary upon the 755th Aphoriſm. Dr Haller has advanced this part of ſcience very much by his experiments on irritability and ſenſibility. In theſe and in many other inſtances, particularly in the writings of Mr Barthez of Montpelier, of ſome progreſs in the ſtudy of the affections of the Nervous Syſtem, we muſt perceive how much we are indebted to Dr Hoffman for his ſo properly beginning it. The ſubject, however, is difficult: The laws of the Nervous Syſtem, in the various circumſtances of the animal œconomy, are by no means aſcertained; and, from want of attention and obſervation with the view to a ſyſtem on this ſubject, the buſineſs appears to many as an inexplicable myſtery. There is no wonder, therefore, that, on ſuch a difficult ſubject, Dr Hoffman's ſyſtem was imperfect and incorrect; and has had leſs influence on the writings and practice of phyſicians ſince his time than might have been expected. He himſelf has not applied his fundamental doctrine ſo extenſively as he might have done; and he has every where intermixed an Humoral Pathology, as incorrect and hypothetical as any other. Though he differed from his colleague Dr Stahl in the fundamental doctrines of his ſyſtem, it is but too evident that he was very much infected with the Stahlian doctrines of Plethora and Cacochymy, as may be obſerved throughout the whole courſe of his work; and particularly in his chapter *De morborum generatione ex nimia ſanguinis quantitate et humorum impuritate.*

BUT it is needleſs for me to dwell any longer upon the ſyſtem of Hoffman: And I am next to offer ſome remarks on the ſyſtem of Dr Boerhaave, the cotemporary of both the other Syſtematics, and who, over all Europe, and eſpecially in this part of the world, gained higher reputation than any others.

DR BOERHAAVE * was a man of general erudition;

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* Voorhoot, a ſmall village about two miles from Leyden, gave birth to this eminent phyſician on the laſt day of the year 1668. He was educated at Leyden, and took his firſt degree in philoſophy in 1690. His theſis on this occaſion was a confutation of the doctrines of Epicurus, Hobbes, and Spinoſa, in which he ſhewed great ſtrength of genius and argument. Although he was at this time well qualified to enter into the church, which was his father's intention, yet he was diffident of his abilities, and choſe to attend the lectures of divinity longer. His patrimony was however now exhauſted, and he ſupported himſelf at the univerſity by teaching mathematics, while he proſecuted his theological ſtudies. This conduct was much approved by the eminent men both of the univerſity and city, and procured for Boerhaave the friendſhip of Mr Vandenburg the burgomaſter of Leyden. Under the patronage, and at the perſuaſion of this gentlemen, Boerhaave

rudition; and, in applying to medicine, he had carefully ſtudied the auxiliary branches of anatomy,

Boerhaave applied himſelf to the ſtudy of phyſic with great ardor and indefatigable diligence. In a ſhort time he became a proficient in anatomy, chemiſtry, and the materia medica, which indeed are the baſes of phyſic. Leaving Leyden, he went to the univerſity of Harderwick in Guelderland, and there took his degree of Doctor of Phyſic in July 1693. On his return to Leyden he ſtill perſiſted in his intention of entering into the miniſtry, which luckily, for the ſake of phyſic, was fruſtrated by the following adventure: In a paſſage boat where Boerhaave was, a diſcourſe was accidentally ſtarted about the doctrines of Spinoſa, as ſubverſive of religion; and one of the paſſengers, with vague invectives of blind zeal, oppoſed this philoſopher's pretended mathematical demonſtration. Boerhaave calmly aſked him if he had read Spinoſa's work, which he had ſo much derided. The bigot was ſuddenly ſtruck dumb, and became fired with ſilent reſentment. As ſoon as he arrived at Leyden, he ſpread abroad a rumour that Boerhaave was become a Spinoſiſt. Boerhaave finding theſe prejudices to gain ground, thought it more prudent to purſue the ſcience of phyſic, than riſk the refuſal of a licence for the pulpit. He now joined the practice of phyſic to the theory. On the 18th of May 1701 he commenced his lectures on the Inſtitutes of Phyſic. In 1709 he was created Profeſſor of Medicine and Botany; and in 1718 he ſucceeded Le Mort tomy, chemiſtry, and botany, ſo that he excelled in each. In forming a Syſtem of Phyſic, he ſeems to have ſtudied diligently all the ſeveral writings of both antient and modern phyſicians; and, without prejudice in favour of any former ſyſtems, he endeavoured to be a candid and genuine ecclectic. Poſſeſſed of an excellent ſyſtematic genius, he gave a ſyſtem ſuperior to any that had ever before appeared. As in the great extent, and ſeemingly perfect conſiſtency, of ſyſtem, he appeared to improve and refine upon every thing that had before been offered; and as in his lectures he explained his doctrines with great clearneſs and elegance, he ſoon acquired a very high reputation, and his ſyſtem was more generally received than any former had been ſince the time of Galen. Whoever will conſider the merits of Dr Boerhaave, and can compare his ſyſtem with that of former writers, muſt acknowledge that he was very juſtly

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Mort in the Profeſſorſhip of Chemiſtry. In Auguſt 1722 he was ſeized with the gout, and was obliged to reſign his profeſſorſhips of Chemiſtry and Botany in 1729. He continued for ſome time to practice, but was at length obliged to quit that alſo; and he died on the 23d of September 1738.

juſtly eſteemed, and gave a ſyſtem which was at that time deſervedly valued.

But, in the progreſs of an inquiſitive and induſtrious age, it was not to be expected that any ſyſtem ſhould laſt ſo long as Boerhaave's has done. The elaborate Commentary of Van Swieten on Boerhaave's ſyſtem of practice, has been only finiſhed a few years ago; and though this commentator has added many facts, and made ſome corrections, he has not, except in the particular mentioned above, made any improvement in the general ſyſtem. It is even ſurpriſing that Boerhaave himſelf, though he lived near forty years after he had firſt formed his ſyſtem, had hardly in all that time made any corrections of it, or additions to it: The following is the moſt remarkable. In aphoriſm 755, the words *forte et nervoſi, tam cerebri quam cerebelli cordi deſtinati inertia*, did not appear in any edition before the fourth; and what a difference of ſyſtem this points at, every phyſician muſt perceive.

When I firſt applied to the ſtudy of Phyſic, I learned only the ſyſtem of Boerhaave; and even when I came to take a Profeſſor's chair in this Univerſity, I found that ſyſtem here in its entire and full force; and as I believe it ſtill ſubſiſts in credit elſewhere, and that no other ſyſtem of reputation has been yet offered to the world, I think it neceſſary for me to point out particularly the imperfections and deficiencies of the Boerhaavian ſyſtem, in order to ſhew the propriety and neceſſity of attempting a new one.

To execute this, however, ſo fully as I might, would lead me into a detail that can hardly be admitted of here; and I hope it is not neceſſary, as I think, that every intelligent perſon, who has acquired any tolerable knowledge of the preſent ſtate of our ſcience, muſt, in many inſtances, perceive its imperfections. I ſhall therefore touch only upon the great lines of this ſyſtem; and from the remarks I am to offer, truſt that both the miſtakes and deficiencies which run through the whole of his works will appear.

Dr Boerhaave's treatiſe of the diſeaſes of the ſimple ſolids, has the appearance of being very clear and conſiſtent, and was certainly conſidered by him as a fundamental doctrine: But, in my apprehenſion, it is neither correct nor extenſively applicable. Not to mention the uſeleſs, and perhaps erroneous, notion of the compoſition of earth and gluten; nor his miſtake concerning the ſtructure of compound membranes; nor his inattention to the ſtate of the cellular texture; all of them circumſtances which render his doctrine imperfect; I ſhall inſiſt only upon the whole being very little applicable to the explaining the phenomena of health or ſickneſs. The laxity or rigidity of the ſimple ſolid does indeed take place at the different periods of life, and may perhaps, upon other occaſions, occur as the cauſe of diſeaſe: But I preſume, that the ſtate of the ſimple ſolid is, upon few occaſions, either changeable or actually changed; and that, in ninety-nine caſes of an hundred, the phenomena attributed to ſuch a change, do truly depend on the ſtate of the *ſolidum vivum;* a circumſtance which Dr Boerhaave has hardly taken notice of in any part of his works. How much this ſhews the deficiency and imperfection of his ſyſtem I need not explain. The learned work of Dr Gaubius, above referred to, as well as many other treatiſes of late authors, point out ſufficiently the defects and imperfections of Boerhaave on this ſubject.

After Dr Boerhaave has conſidered the diſeaſes of the ſolids, he, in the next place, attempts to explain the more ſimple diſeaſes of the fluids; and there, indeed, he delivers a more correct doctrine of acid and alkali than had been given before: But, after all, he has done it very imperfectly. We have, indeed, ſince his time, acquired more knowledge upon the ſubject of digeſtion; and ſo much as to know, that a great deal more is yet neceſſary to enable us to underſtand in what manner the animal fluids are formed from the aliments taken in. And although Dr Boerhaave has fallen into no conſiderable error with reſpect to a morbid acidity in the ſtomach, he could not poſſibly be complete upon that ſubject; and his notion of the effects of acidity in the maſs of blood ſeems to have been entirely miſtaken, and is indeed not conſiſtent with what he himſelf has delivered elſewhere.

His doctrine of alkali is ſome what better founded, but it is probably carried too far; and the ſtate of alkaleſcency and putrefaction, as well as all the other changes which can take place in the condition of animal fluids, are particulars yet involved in great obſcurity, and are therefore ſtill ſubjects of diſpute.

THERE is another particular, in which Boerhaave's doctrine concerning the fluids appears to me imperfect and unſatisfactory; and that is, in his doctrine *de Glutinoſa ſpontaneo.* The cauſes which he has aſſigned for it are by no means probable, and the actual exiſtence of it is ſeldom to be proved. Some of the proofs adduced for the exiſtence of the *phlegma calidum*, are manifeſtly founded on a miſtake with reſpect to what has been called the inflammatory cruſt, (See Van Swieten's Commentary, page 96.); and the many examples given by Boerhaave of a *glutinoſum* appearing in the human body, (*Aph.* 75.) are all of them nothing more than inſtances of collections or concretions found out of the courſe of the circulation.

IF, then, we conſider the imperfection of Dr Boerhaave's doctrine with reſpect to the ſtate and various condition of the animal fluids; and if at the ſame time we reflect how frequently he and his followers have employed the ſuppoſition of an acrimony or lentor of the fluids, as cauſes of diſeaſe, and for directing the practice; we muſt, as I apprehend, be ſatisfied, that his ſyſtem is not only deficient and incomplete, but fallacious and apt to miſlead. Although it cannot be denied, that the fluids of the human body ſuffer various morbid changes; and that upon theſe, diſeaſes may primarily depend; yet I muſt beg leave to maintain, that the nature of theſe changes is ſeldom underſtood, and more ſeldom ſtill is it known when they have taken place: That our reaſonings concerning them have been, for the moſt part, purely hypothetical; have therefore contributed nothing to improve, and have often miſled, the practice of phyſic. In this, particularly, they have been hurtful, that they have withdrawn our attention from, and prevented our ſtudy of, the motions of the animal ſyſtem, upon the ſtate of which the phenomena of diſeaſes do more certainly and generally depend. Whoever, then, ſhall conſider the almoſt total neglect of the ſtate of the moving powers of the animal body, and the prevalence of an hypothetical humoral pathology, ſo conſpicuous in every part of the Boerhaavian Syſtem, muſt be convinced of its very great defects, and perceive the neceſſity of attempting one more correct.

After giving this general view, it is not requiſite to enter into particulars: But, I believe, there are very few pages of his aphoriſms in which there does not occur ſome error or defect; although, perhaps, not to be imputed to the fault of Boerhaave, ſo much as to this, that ſince his time a great collection of new facts has been acquired by obſervation and experiment. This, indeed, affords the beſt and moſt ſolid reaſon for attempting a new ſyſtem: For, when many new facts have been acquired, it becomes requiſite that theſe ſhould be incorporated into a ſyſtem, whereby not only particular ſubjects may be improved, but the whole may be rendered more complete, conſiſtent, and uſeful. Every ſyſtem, indeed, muſt be valuable in proportion to the number of facts that it embraces and comprehends; and Monſ. Queſney could not pay a higher compliment to the ſyſtem of Boerhaave, than by ſaying that it exhibited *La medicine collective.*

But here it will, perhaps, be ſuggeſted to me, that the only uſeful work on the ſubject of Phyſic, is the making a collection of all the facts that relate to the art, and therefore of all that experience has taught us with reſpect to the cure of diſeaſes. I agree entirely in the opinion; but doubt if it can ever be properly accompliſhed, without aiming at ſome ſyſtem of principles, by a proper induction and generaliſation of facts: At leaſt I am perſuaded that it can be done not only very ſafely, but moſt uſefully in this way. This, however muſt be determined by a trial. I know that the late Mr Lieutaud has attempted a work on the plan of collecting facts without any reaſoning concerning their cauſes: And while I am endeavouring to give ſome account of the preſent ſtate of Phyſic, I cannot diſmiſs the ſubject without offering ſome remarks upon the promiſing *Synopſis univerſae medicinae*, compoſed by the firſt phyſician of a learned and ingenious nation.

In this work there are many facts and much obſervation from the Author's own experience, which may be uſeful to thoſe who have otherwiſe acquired ſome knowledge and diſcernment; but, throughout the whole work, there is ſuch total want of method, arrangement, ſyſtem, or deciſion, that, in my humble opinion, it can be of little uſe, and may prove very perplexing to thoſe who are yet to learn. The diſtinction of the genera of diſeaſes, the diſtinction of the ſpecies of each, and often even that of the varieties, I hold to be a neceſſary foundation of every plan of Phyſic, whether Dogmatical or Empirical. But very little of this diſtinction is to be found in the work of Mr Lieutaud; and in his preface he tells us, that he meant to neglect ſuch *arguta ſedulitas*. And indeed his method of managing his ſubject muſt certainly interrupt and retard all methodical noſology. His arrangement of diſeaſes is according to no affinity, but that of the ſlighteſt and uninſtructive kind, the place of the body which they happen to affect. His *Generalia et incertæ ſedis*, have hardly any connection at all; the titles, *Rheumatiſmus*, *Hypochondriaſis*, *Hydrops*, follow one another. When he does attempt any general doctrine, it is not till long after he has treated of the widely-ſcattered particulars. Under each particular title which he aſſumes, he has endeavoured to enumerate the whole of the ſymptoms that ever appeared in a diſeaſe under that title; and this without aiming at any diſtinction between the eſſential and accidental ſymptoms, or marking the ſeveral combinations under which theſe ſymptoms do for the moſt part ſteadily appear. From the concurrence of accidental ſymptoms, the variety of the ſame diſeaſe is frequently conſiderable, a circumſtance neceſſarily perplexing and diſtracting to young practitioners; but it ſeems ſtrange to me, that an experience of thirty years, in conſiderable practice, could do nothing to relieve them.

MR LIEUTAUD has at the ſame time increaſed the confuſion that muſt ariſe from this want of diſtinction, by his conſidering as primary diſeaſes, what appear to me to be the ſymptoms, effects, and ſequels, of other diſeaſes only. Of this I think the *Æſtus morboſus*, *Virium exolutio*, *Dolores*, *Stagnatio ſanguinis*, *Purulentia*, *Tremor*, *Pervigilium*, *Raucedo*, *Suffocatio*, *Vomica*, *Empyema*, *Singultus*, *Vomitus*, *Dolor Stomachi*, *Teneſmus*, all treated of under ſeparate titles, are examples. A general Symptomatologia may be a very uſeful work, with a view to a Syſtem of Pathology; but, with a view to practice without any Syſtem, it muſt have bad effects, as leading only to a palliative practice, and diverting from the proper efforts towards obtaining a radical cure. Mr Lieutaud, indeed, has endeavoured to exhibit the ſymptoms above mentioned as ſo many *primary diſeaſes:* But he has ſeldom ſucceeded in this; and, in delivering the practice, he commonly finds it neceſſary to conſider them as ſymptoms, and that not without ſome theory, implied or expreſſed, with reſpect to their proximate cauſes. His title of *Dolores* may be taken as an example of this; and from which it may be readily perceived how far ſuch treatiſes can be really uſeful.

In eſtabliſhing a proper pathology, there is nothing that has been of more ſervice than the Diſſection of morbid bodies. Mr Lieutaud has been much and moſt commendably employed in this way, and in this Synopſis he has endeavoured to communicate his knowledge on the ſubject; but, in my humble opinion, he has ſeldom done it in a manner that can be uſeful. In the ſame way that he has delivered the ſymptoms

toms of diſeaſes without any inſtructive arrangement; ſo, on the ſubject of the appearances after death, he has mentioned every morbid appearance that had ever been obſerved after the diſeaſe of which he is then treating: But theſe appearances are ſtrangely huddled together, without any notice taken of thoſe which belong to one ſet of ſymptoms or to another; and, with regard to the whole, without any attempt to diſtinguiſh between the cauſes of diſeaſes and the cauſes of death; although the want of ſuch diſtinction is the well-known ground of fallacy upon this ſubject. I take for an example, the appearances mentioned as having been obſerved after dropſy. Here morbid appearances, found in every part of the body, in every cavity of it, and in every viſcus contained in theſe cavities, are enumerated; but which of theſe morbid ſtates are more frequent or more rare, and which had been more particularly connected with the different cauſes, or with the different ſtate of ſymptoms previouſly recited, we are not informed, nor has he enabled us to diſcover. In ſhort, the diſſection of morbid bodies has been, and may be, highly uſeful; but in order to be ſo, it muſt be under a different management from what we find, either in this Synopſis, or even in the *Hiſtoria Anatomico-medica.*

I CANNOT diſmiſs this ſubject without remarking, that the diſſection of morbid bodies, is chiefly valuable upon account of its leading us to diſcover the proximate cauſes of diſeaſes: And the great and valuable work of the illuſtrious Morgagni, is properly intitled *De ſedibus et* CAUSIS. It may well ſeem ſurpriſing, then, that Lieutaud ſhould find the whole of proximate cauſes *atra caligine merſas;* and that he ſhould never have thought of applying his diſſections towards the aſcertaining at leaſt ſome of theſe.

BUT let me now proceed to conſider the important part of every practical work, and of this *Synopſis univerſae medicinae;* that is, the method of curing diſeaſes.

HERE, again, upon the ſame plan as in giving the hiſtories of diſeaſe, the method of cure is delivered by enumerating the whole of the remedies that have ever been employed in a diſeaſe under the title prefixed; without aſſigning the ſpecies, or the circumſtances to which the remedies, though of a very different and ſometimes oppoſite nature, are peculiarly adapted. On the ſubject of Aſthma, he very juſtly obſerves that phyſicians have been to blame in confounding, under this title, almoſt all the ſpecies of Dyſpnoea; and he himſelf very properly conſiders Aſthma as a diſeaſe diſtinct from all the other caſes of Dyſpnoea. Still, however, he conſiders Aſthma as of many different ſpecies, ariſing from many different cauſes, which, till we underſtand better, we cannot attempt to remove. Notwithſtanding all this, he proceeds to deliver a very general cure. *Parum abeſt*, ſays he, *quin ſpecifici titulo gaudeant pectoralia, vulneraria, et incidentia!* But from ſuch language I receive no clear idea; nor can I obtain any clear direction from the enumeration of his medicines. *Baccae juniperi, gummi tragacanthum vel ammoniacum, ſapo, aqua picca, terebinthina, &c. quae tamen haud indiſcriminatim ſunt uſurpanda, ſed pro re nata, delectu opus eſt.* Very juſtly indeed, *delectu opus eſt*; but here, as in many other inſtances, he gives us no ſort of aſſiſtance.

From his endeavours, though not always ſucceſsful, to neglect all ſyſtem, his practice is generally delivered in a very indeciſive manner; or, what has the ſame effect, in a way ſo conditional as will render it always difficult, and often impoſſible, for a young practitioner to follow him. Let us take, for example, his cure of Dropſy. "The cure may be begun by "blood-letting in certain conditions; *but, in o-"thers, it cannot be employed without danger.* It "gives relief in difficult breathing; *but, after it "is practiſed, the ſymptoms are aggravated, and "rendered more obſtinate.* It is not to be con-"cealed that ſome perſons have been cured by "repeated blood-lettings, or ſpontaneous hae-"morrhagies; *but it is at the ſame time* known, "*that ſuch a remedy inopportunely employed, has "in many inſtances haſtened on the fatal event.*"

In the ſame manner he treats of vomiting, purging, ſweating, and the uſe of mineral waters: But I muſt confeſs, that he has no where removed any of my doubts or difficulties, and indeed he has ſometimes increaſed them. He ſays, that hepatics, or aperients, ſuch as the *lingua cervina, herbæ capillares, &c.* deſerve commendation;

mendation; but that, when the diſeaſe has ariſen to a certain degree, they have been, *for the moſt part, found to be uſeleſs.* He obſerves, that the powder of toads given in wine, to the quantity of a ſcruple or more, has ſucceeded with ſeveral.

Such are, commonly, the methods of cure delivered by Mr Lieutaud, *longiori et forte feliciſſima praxi edoctus.*

It would be tedious to enter further into that detail, which a criticiſm of this immethodical and uninſtructive work might lead me into; but, if the bounds proper for this preface did not prevent me, I would particularly ſhow that the work is far from being free from thoſe reaſonings which the author pretends to avoid, and would effect even to deſpiſe. He ſtill holds the doctrines of the CONCOCTION and CRITICAL EVACUATION of MORBIFIC MATTER; doctrines depending upon ſubtile theories, and which, in my opinion, can in nowiſe be aſcertained as matters of fact. Mr Lieutaud likewiſe is ſtill very much upon the old plan of following NATURE, and therefore gives often what I conſider as a feeble and inert practice. The *humectantia*, *diluentia*, *demulcentia*, *et temperantia*, are with him very univerſal remedies, and often thoſe which alone are to be employed.

The mention of theſe medicines might lead me to take notice of Mr Lieutaud's ſecond volume, in which, *ab inſula remediorum farragine alienus*, he promiſes a great reformation upon the ſubject: But this falls ſo far ſhort of the idea of Britiſh phyſicians, that I need not make any remarks upon it. With reſpect to his liſt of ſimples, or *Emporetica*, as he is pleaſed to term them, an Engliſh apothecary would ſmile at it; and with reſpect to his *officinalia*, I believe they are to be found no where but in the *Codex Medicamentarius* of Paris; and in his *Magiſtralia* his doſes are generally ſuch as the moſt timid practitioner in this country would hardly deſcend to, and ſuch as none of our practitioners of experience would depend upon. In ſhort, the whole of the work, both with reſpect to the theories with which it abounds, and to the facts which it gives, will not, in my apprehenſion, bear any ſerious criticiſm. But I muſt conclude, and ſhall only ſay further, that ſuch as I have repreſented it, is this work, executed by a man of the firſt rank in the profeſſion. It is indeed for that reaſon I have choſen it as the example of a work, upon the plan of giving facts only, and of avoiding the ſtudy or even the notice of the proximate cauſes of diſeaſes: And with what advantage ſuch a plan is purſued, I ſhall leave my readers to conſider.

In the following treatiſe I have followed a different courſe. I have endeavoured to collect the facts relative to the diſeaſes of the human body, as fully as the nature of the work and the bounds neceſſarily preſcribed to it would admit: But I have not been ſatisfied with giving the facts, without endeavouring to apply them to the inveſtigation of proximate cauſes, and upon theſe to eſtabliſh a more ſcientific and decided method of cure. In aiming at this, I flatter myſelf that I have avoided hypotheſis, and what have been called *theories.* I have, indeed, endeavoured to eſtabliſh many general doctrines, both phyſiological and pathological; but I truſt that theſe are only a generaliſation of facts, or concluſions from a cautious and full induction: And if any one ſhall refuſe to admit, or directly ſhall oppoſe, my general doctrines, he muſt do it by ſhewing that I have been deficient or miſtaken in aſſuming and applying facts. I have, myſelf, been jealous of my being ſometimes imperfect in theſe reſpects; but I have generally endeavoured to obviate the conſequences of this, by proving, that the proximate cauſes which I have aſſigned are true in fact, as well as deductions from any reaſoning that I may ſeem to have employed. Further, to obviate any dangerous fallacy in propoſing a method of cure, I have always been anxious to ſuggeſt that which, to the beſt of my judgment, appeared to be the method approved of by experience, as much as it was the conſequence of ſyſtem.

Upon this general plan I have endeavoured to form a ſyſtem of phyſic that ſhould comprehend the whole of the facts relating to the ſcience, and that will, I hope, collect and arrange them in better order than has been done before, as well as point out in particular thoſe which are ſtill wanting to eſtabliſh general principles. This which I have attempted, may, like other ſyſtems, hereafter ſuffer a change; but I am confident, that we are at preſent in a better train of inveſtigation than phyſicians were in before the time of Dr Hoffman. The affections of the motions and moving powers of the animal œconomy, muſt certainly be the leading inquiry in conſidering the diſeaſes of the human body. The inquiry may be difficult; but it muſt be attempted, or the ſubject muſt be deſerted altogether. I have, therefore, aſſumed the general principles of Hoffman, as laid down in the paſſage which I have quoted above: And if I have rendered them more correct, and more extenſive in their application; and, more particularly, if I have avoided introducing the many hypothetical doctrines of the Humoral Pathology, which disfigured both his and all the other ſyſtems which have hitherto prevailed; I hope I ſhall be excuſed for attempting a ſyſtem, which upon the whole may appear new.

EDIN. *Nov.* 1783.

PART I.

OF PYREXIÆ,

OR

FEBRILE DISEASES.

FIRST LINES

OF THE

PRACTICE OF PHYSIC.

INTRODUCTION.

1. IN teaching the PRACTICE of PHYSIC, we endeavour to give inſtructions for *diſcerning*, *diſtinguiſhing*, *preventing*, and *curing* diſeaſes, as they occur in particular perſons.

2. The art of DISCERNING and DISTINGUISHING diſeaſes, may be beſt attained by an accurate and complete obſervation of their phenomena, as theſe occur in concourſe and in ſucceſſion, and by conſtantly endeavouring to diſtinguiſh the peculiar

and inſeparable concurrence of ſymptoms, to eſtabliſh a METHODICAL NOSOLOGY, or an arrangement of diſeaſes according to their genera and ſpecies, founded upon obſervation alone, abſtracted from all reaſoning. Such an arrangement I have attempted in another work, to which, in the courſe of the preſent, I ſhall frequently refer.

3. The PREVENTION of diſeaſes depends upon the knowledge of their remote* cauſes;

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[*] Remote cauſes are of two kinds, viz. the prediſpoſing and the exciting, or, as it is ſometimes called, the occaſional. The prediſpoſing is that which renders the body liable or capable of being affected by diſeaſe when the exciting cauſe is applied. No diſeaſe can exiſt without an occaſional cauſe; yet it is neceſſary, that, at the ſame time, the ſtate of the body be ſuch as to admit that cauſe to take effect, or act. The prediſpoſing cauſe is inherent in the body; but it may nevertheleſs be induced or changed by an external cauſe ſtill more remote. Thus plethora may be the prediſpoſing cauſe of many diſeaſes, yet that ſame plethora may be induced

cauſes; which is partly delivered in the general Pathology, and partly to be delivered in this treatiſe.

4. The CURE of diſeaſes is chiefly, and almoſt unavoidably, founded in the knowledge of their proximate* cauſes. This requires an acquaintance with the Inſtitutions of Medicine; that is, the knowledge of the ſtructure, action, and functions of the human body; of the ſeveral changes which it may undergo; and of the ſeveral powers by which it can be changed. Our knowledge of theſe particulars, however, is ſtill incomplete, is in many reſpects doubtful,

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induced by various cauſes previouſly acting on the body.

The prevention of diſeaſes is to avoid the exciting cauſe, and to correct that ſtate of the body, which renders it capable of being affected by the exciting cauſe.

[*] Proximate cauſes are thoſe which immediately produce the diſeaſe, and whoſe removal cures the diſeaſe.

ful, and has been often involved in miſtake and error. The doctrine, therefore, of proximate cauſes, founded upon that knowledge, muſt be frequently precarious and uncertain. It is, however, poſſible for a judicious phyſician to avoid what is vulgarly called theory, that is, all reaſoning founded upon hypotheſis, and thereby many of the errors which have formerly taken place in the Inſtitutions of Medicine. It is poſſible alſo for a perſon who has an extenſive knowledge of the facts relative to the animal œconomy in health and in ſickneſs, by a cautious and complete induction, to eſtabliſh many general principles which may guide his reaſoning with ſafety; and while, at the ſame time, a phyſician admits, as a foundation of practice, thoſe reaſonings only which are ſimple, obvious, and certain, and for the moſt part admits, as proximate cauſes, thoſe alone that are eſtabliſhed as matters of fact rather than as deductions of reaſoning, he may with great advantage eſtabliſh a ſyſtem of practice chiefly founded on the doctrine of proximate cauſes. But when this cannot be done with ſufficient certainty, the judicious and prudent phyſician will have recourſe to EXPERIENCE alone; always, however, aware of the hitherto incomplete and fallacious ſtate of Empiriciſm.

5. With a ſtrict attention to theſe conſiderations in the whole of the following Treatiſe, I proceed to treat of particular diſeaſes in the order of my Methodical Noſology.

PART I.

OF PYREXIÆ, OR FEBRILE DISEASES.

6. PYREXIÆ, or febrile diſeaſes, are diſtinguiſhed by the following appearances. After beginning with ſome degree of cold ſhivering, they ſhew ſome increaſe of heat, and an increaſed frequency of pulſe, with the interruption and diſorder of ſeveral functions, particularly ſome diminution of ſtrength in the animal functions.

7. Of theſe Pyrexiæ I have formed a claſs, and have ſubdivided it into the five orders of FEVERS, INFLAMMATIONS, ERUPTIONS, HEMORRHAGIES, and FLUXES. See Synopſis Noſologæ Methodicæ, Edit. 3. 1780.

BOOK I.

OF FEVERS.

CHAP. I.

OF THE PHENOMENA OF FEVERS.

8. THOSE diſeaſes are more ſtrictly called FEVERS, which have the general ſymptoms of pyrexia, without having alongſt with them any topical affection that is eſſential and primary, ſuch as the other orders of the Pyrexiæ always have.

9. Fevers, as differing in the number and variety of their ſymptoms, have been very properly conſidered as of diſtinct genera and ſpecies. But we ſuppoſe, that

there are certain circumſtances in common to all the diſeaſes comprehended under this order, which are therefore thoſe eſſentially neceſſary to, and properly conſtituting the nature of fever. It is our buſineſs eſpecially, and in the firſt place, to inveſtigate theſe; and I expect to find them as they occur in the paroxyſm or fit of an intermittent fever, as this is moſt commonly formed.

10. The phenomena to be obſerved in ſuch a paroxyſm are the following: The perſon is affected, firſt with a languor or ſenſe of debility, a ſluggiſhneſs in motion, and ſome uneaſineſs in exerting it, with frequent yawning and ſtretching. At the ſame time, the face and extremities become pale; the features ſhrink; the bulk of every external part is diminiſhed; and the ſkin, over the whole body, appears conſtricted, as if cold had been applied to it. At the coming on of theſe ſymptoms, ſome coldneſs of the extremities, though little

taken notice of by the patient, may be perceived by another perſon. At length the patient himſelf feels a ſenſation of cold, commonly firſt in his back, but, from thence, paſſing over the whole body; and now his ſkin feels warm to another perſon. The patient's ſenſe of cold increaſing, produces a tremor in all his limbs, with frequent ſuccuſſions or rigors of the trunk of the body. When this ſenſe of cold, and its effects, have continued for ſome time, they become leſs violent, and are alternated with warm fluſhings. By degrees, the cold goes off entirely; and a heat, greater than natural, prevails, and continues over the whole body. With this heat, the colour of the ſkin returns, and a preternatural redneſs appears, eſpecially in the face. Whilſt the heat and redneſs come on, the ſkin is relaxed and ſmoothed, but, for ſome time, continues dry. The features of the face, and other parts of the body, recover their uſual ſize, and become even more turgid. When the heat, redneſs, and turgeſcence have increaſed and continued for ſome time, a moiſture appears upon the forehead, and by degrees becomes a ſweat, which gradually extends downwards over the whole body. As this ſweat continues to flow, the heat of the body abates; the ſweat, after continuing ſome time, gradually ceaſes; the body returns to its uſual temperature; and moſt of the functions are reſtored to their ordinary ſtate *.

11. This ſeries of appearances gives occaſion to divide the paroxyſm into three different ſtages, which are called the COLD, the HOT, and the SWEATING STAGES or *Fits.*

In the courſe of theſe, conſiderable changes happen in the ſtate of ſeveral other functions, which are now to be mentioned.

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* This deſcription of a paroxyſm is truly admirable. The ſymptoms are moſt accurately deſcribed, and the order of their ſucceſſion moſt ſtrictly attended to by the author.

12. Upon the firſt approach of languor, the pulſe becomes ſometimes ſlower, and always weaker than before. As the ſenſe of cold comes on, the pulſe becomes ſmaller, very frequent, and often irregular. As the cold abates, and the heat comes on, the pulſe becomes more regular, hard, and full; and, in theſe reſpects, increaſes till the ſweat breaks out. As the ſweat flows, the pulſe becomes ſofter and leſs frequent, till, the ſweat ceaſing altogether, it returns to its uſual ſtate.

13. The reſpiration alſo ſuffers ſome changes. During the cold ſtage, the reſpiration is ſmall, frequent, and anxious, and is ſometimes attended with a cough: As the hot ſtage comes on, the reſpiration becomes fuller and more free; but continues ſtill frequent and anxious, till the flowing of the ſweat relieves the anxiety, and renders the breathing leſs frequent and more free. With the ceaſing of the ſweat, the breathing returns to its ordinary ſtate.

14. The natural functions alſo ſuffer a change. Upon the approach of the cold ſtage, the appetite for food ceaſes, and does not return till the paroxyſm be over, or the ſweat has flowed for ſome time. Generally, during the whole of the paroxyſm, there is not only a want of appetite, but an averſion from all ſolid, and eſpecially animal food. As the cold ſtage advances, there frequently comes on a ſickneſs and nauſea, which often increaſes to a vomiting of a matter that is for the moſt part bilious. This vomiting commonly puts an end to the cold ſtage, and brings on the hot. As the hot ſtage advances, the nauſea and vomiting abate; and when the ſweat breaks out, they generally ceaſe altogether.

15. A conſiderable degree of thirſt is commonly felt during the whole courſe of the paroxyſm. During the cold ſtage, the thirſt ſeems to ariſe from the dryneſs and clammyneſs of the mouth and fauces, but, during the hot ſtage, from the heat which

then prevails over the whole body; and, as the ſweat flows, the mouth becomes moiſter, and the thirſt, together with the heat, gradually abates*.

16. In the courſe of a paroxyſm, there is often a conſiderable change in the ſtate of the ſecretions. The circumſtances juſt now mentioned ſhew it in the ſecretion of the ſaliva and mucus of the mouth; and it is ſtill more remarkable with reſpect to the urine. During the cold ſtage, the urine is almoſt colourleſs, and without cloud or ſediment. In the hot ſtage, it becomes high coloured, but is ſtill without ſediment.

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* The thirſt in the cold and hot ſtages of the paroxyſm ſeems to be a provident deſign of nature, and has been held forth as an argument for the exiſtence of the *vis medicatrix naturæ*. The paroxyſm concludes with a profuſe ſweat; the production of this ſweat requires an additional quantity of fluidity; and nature, by means of the thirſt, ſeems anxious to ſupply the quantity of fluid matter neceſſary for the perſpiration that is requiſite to remove the diſeaſe.

After the ſweat has flowed freely, the urine depoſites a ſediment commonly lateritious, and continues to do ſo for ſome time after the paroxyſm is over.

17. Excepting in certain uncommon caſes, which are attended throughout with a diarrhœa, ſtools ſeldom occur till towards the end of a paroxyſm, when commonly a ſtool happens, and which is generally of a looſe kind *.

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* The author's expreſſion is here ſomewhat aukward; the meaning of the paſſage is, that ſtools ſeldom occur in the two firſt ſtages of a paroxyſm, except in peculiar caſes attended with diarrhœa; and if a ſtool happens about the end of the paroxyſm, it is generally of a looſe kind.

A ſpontaneous diarrhœa always increaſes the violence of the ſymptoms, and the obſtinacy of the diſeaſe. Hence the abſurd practice of preſcribing purges in agues, which never fail to exacerbate the paroxyſms, and prolong their continuance. If any uneaſineſs ariſes from accumulated fæces in the colon or rectum, they may be removed by emolient glyſters.

18. Analogous to theſe changes in the ſtate of the ſecretions, it frequently happens, that the tumours ſubſiſting on the ſurface of the body ſuffer, during the cold ſtage of fevers, a ſudden and conſiderable detumeſcence; but generally, though not always, the tumours return to their former ſize during the ſweating ſtage. In like manner, ulcers are ſometimes dried up during the cold ſtage, and return again to diſcharge matter during the ſweating ſtage, or after the paroxyſm is over.

19. Certain changes appear alſo in ſenſation and thought. During the cold ſtage, the ſenſibility is often greatly impaired; but when the hot ſtage is formed, the ſenſibility is recovered, and often conſiderably increaſed.

20. With reſpect to the intellectual functions, when the cold ſtage comes on, attention and recollection become difficult, and continue more or leſs ſo during the

whole paroxyſm. Hence ſome confuſion of thought takes place, and often ariſes to a delirium, which ſometimes comes on at the beginning of the cold ſtage, but more frequently not till the hot ſtage be formed.

21. It belongs alſo to this place to remark, that the cold ſtage ſometimes comes on with a drowſineſs and ſtupor, which often increaſe to a degree that may be called comatoſe or apoplectic.

22. We have ſtill to add, that ſometimes, early in the cold ſtage, a headach comes on; but which, more commonly, is not felt till the hot ſtage be formed, and then is uſually attended with a throbbing of the temples. The headach continues till the ſweat breaks out; but as this flows more freely, that gradually goes off. At the ſame time with the headach, there are commonly pains of the back, and of ſome of the great joints; and theſe pains have the ſame courſe with the headach.

23. Theſe are nearly the whole, and are at leaſt the chief of the phenomena which more conſtantly appear in the paroxyſm of an intermittent fever; and we have pointed out their ordinary concourſe and ſucceſſion. With reſpect to the whole of them, however, it is to be obſerved, that, in different caſes, the ſeveral phenomena are in different degrees; that the ſeries of them is more or leſs complete; and that the ſeveral parts or ſtages, in the time they occupy, are in a different proportion to one another.

24. It is very ſeldom that a fever conſiſts of a ſingle paroxyſm, ſuch as we have now deſcribed; and it more generally happens, after a certain length of time has elapſed from the ceaſing of the paroxyſm, that the ſame ſeries of phenomena again ariſes, and obſerves the ſame courſe as before; and theſe ſtates of FEVER and APYREXIA often continue to alternate with one another for many times. In ſuch caſes, the

length of time from the end of one paroxyſm to the beginning of another, is called an INTERMISSION; and the length of time from the beginning of one paroxyſm to the beginning of another next ſucceeding, is called an INTERVAL.

25. When the diſeaſe conſiſts of a number of paroxyſms, it is generally to be obſerved, that the intervals between them are nearly equal; but theſe intervals are of different lengths in different caſes. The moſt uſual interval is that of forty-eight hours, which is named the TERTIAN period. The next moſt common is that of ſeventy-two hours, and is named the QUARTAN period. Some other intervals alſo are obſerved, particularly one of twenty-four hours, named therefore the QUOTIDIAN; and the appearance of this is pretty frequent. But all other intervals longer than that of the quartan are extremely rare, and proba-

bly are only irregularities of the tertian or quartan periods *.

26. The paroxyſms of pure intermittent fevers are always finiſhed in leſs than twenty-four hours; and though it happens that there are fevers which conſiſt of repeated paroxyſms, without any entire intermiſſion between them; yet in ſuch caſes it is obſerved, that though the hot and ſweating ſtages of the paroxyſm do not entirely

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[*] Of the quotidian, tertian, and quartan intermittents there are many varieties and forms; as, The double tertian, having a paroxyſm every day, with the alternate paroxyſms ſimilar to one another. The double tertian, with two paroxyſms every other day. The triple tertian, with two paroxyſms on one day, and another on the next. The double quartan, with two paroxyſms on the firſt day, none on the ſecond and third, and two again on the fourth day. The double quartan, with a paroxyſm on the firſt day, another on the ſecond, but none on the third. The triple quartan, with three paroxyſms every fourth day. The triple quartan, with a paroxyſm every day, every fourth paroxyſm being ſimilar.

ceaſe before the twenty-four hours from their beginning have expired, they ſuffer, however, before that time, a conſiderable abatement or REMISSION of their violence; and, at the return of the quotidian period, a paroxyſm is in ſome ſhape renewed, which runs the ſame courſe as before. This conſtitutes what is called a REMITTENT FEVER.

27. When in theſe remittents the remiſſion is conſiderable, and the return of a new paroxyſm is diſtinctly marked by the ſymptoms of a cold ſtage at the beginning of it, ſuch fevers retain ſtrictly the appellation of REMITTENTS. But when it happens, as it does in certain caſes, that the remiſſion is not conſiderable, is perhaps without ſweat, and that the returning paroxyſm is not marked by the moſt uſual ſymptoms of a cold ſtage, but chiefly by the aggravation or EXACERBATION of a hot ſtage, the diſeaſe is called a CONTINUED FEVER.

28. In ſome caſes of continued fever, the remiſſions and exacerbations are ſo inconſiderable as not to be eaſily obſerved or diſtinguiſhed; and this has led phyſicians to imagine, that there is a ſpecies of fever ſubſiſting for ſeveral days together, and ſeemingly conſiſting of one paroxyſm only. This they have called a CONTINENT FEVER; but, in a long courſe of practice, I have not had an opportunity of obſerving ſuch a fever.

29. It is, however, to be obſerved here, that the fevers of a continued form are to be diſtinguiſhed from one another; and that, while ſome of a very continued form do ſtill belong to the ſection of intermittents, there are others which, though ſtill conſiſting of ſeparate and repeated paroxyſms, yet, as different by their cauſes and circumſtances from intermittents, are to be diſtinguiſhed from the whole of theſe, and are more ſtrictly to be called and conſidered

as CONTINUED *. Such are moſt of thoſe which have been commonly ſuppoſed to be CONTINENT; and thoſe which by moſt writers have been ſimply named CONTINUED, and which term I have employed as the title of a ſection, to be diſtinguiſhed from that of INTERMITTENT.

I ſhall here add the marks by which, in practice, theſe different continued fevers may be diſtinguiſhed from one another.

Thoſe fevers of a continued form, which, however, ſtill belong to the ſection of intermittents, may be diſtinguiſhed by their having paſſed from an intermittent or remittent form, to that of a continued; by their ſhewing ſome tendency to become intermittent, or at leaſt remittent; by their being known to have been occaſioned by marſh

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* This paſſage is very obſcure: The author's meaning is, that ſome continued fevers put on the appearance of intermittents; but, being different, in ſome peculiar and material circumſtances, from intermittents, are not to be claſſed with them.

marſh miaſmata; and, for the moſt part, by their having but one paroxyſm, or one exacerbation and remiſſion, in the courſe of twenty-four hours.

On the other hand, Continued Fevers, to be more ſtrictly ſo called, may be diſtinguiſhed by their ſhewing little tendency to become intermittent or remittent in any part of their courſe, and eſpecially after the firſt week of their continuance; by their being occaſioned by human contagion, at leaſt by other cauſes than the marſh miaſmata; and by their having pretty conſtantly an exacerbation and remiſſion twice in the courſe of every twenty-four hours. In both caſes, the knowledge of the nature of the epidemic for the time prevailing, may have a great ſhare in determining the nature of the particular fever.

30. With reſpect to the form, or TYPE, of fevers, this further may be obſerved, That the quartan, while it has the longeſt

interval, has, at the ſame time, the longeſt and moſt violent cold ſtage; but, upon the whole, the ſhorteſt paroxyſm: That the tertian, having a ſhorter interval than the quartan, has, at the ſame time, a ſhorter and leſs violent cold ſtage; but a longer paroxyſm: And laſtly, that the quotidian, with the ſhorteſt interval, has the leaſt of a cold ſtage, but the longeſt paroxyſm.

31. The type of fevers is ſometimes changed in their courſe. When this happens, it is generally in the following manner: Both tertians and quartans change into quotidians, quotidians into remittents, and theſe laſt become often of the moſt continued kind. In all theſe caſes, the fever has its paroxyſms protracted longer than uſual, before it changes into a type of more frequent repetition.

32. From all this a preſumption ariſes, that every fever conſiſts of repeated paroxyſms, differing from others chiefly in the

circumſtances and repetition of the paroxyſms; and, therefore, that it was allowable for us to take the paroxyſm of a pure intermittent as an example and model of the whole.

CHAP. II.

OF THE PROXIMATE CAUSE OF FEVER.

33. THE proximate cauſe * of fever ſeems hitherto to have eluded the reſearch of phyſicians; and I ſhall not pretend to aſcertain it in a manner that may remove

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* The author, in this chapter, delivers his favourite doctrine of univerſal ſpaſm. It is by no means new, as he himſelf confeſſes in the preface, but borrowed from Hoffman. The author, however, greatly improved the original idea, and brought the ſyſtem to a greater degree of perfection than it had before. That there are weighty objections againſt it cannot, indeed, be denied; it contains, however, much ingenuity; and Dr Cullen, by introducing it into this Univerſity, raiſed his name high in the annals of medical fame.

remove every difficulty; but I ſhall endeavour to make an approach towards it, and ſuch as I hope may be of uſe in conducting the practice in this diſeaſe: While at the ſame time I hope to avoid ſeveral errors which have formerly prevailed on this ſubject.

34. As the hot ſtage of fever is ſo conſtantly preceded by a cold ſtage, we preſume that the latter is the cauſe of the former; and, therefore, that the cauſe of the cold ſtage is the cauſe of all that follows in the courſe of the paroxyſm. See Boerh. Aph. 756.

35. To diſcover the cauſe of the cold ſtage of fevers, we may obſerve, that it is always preceded by ſtrong marks of general debility prevailing in the ſyſtem. The ſmallneſs and weakneſs of the pulſe, the paleneſs and coldneſs of the extreme parts, with the ſhrinking of the whole body, ſufficiently ſhew, that the action of the heart

and larger arteries is, for the time, extremely weakened. Together with this, the languor, inactivity, and debility of the animal motions, the imperfect ſenſations, the feeling of cold, while the body is truly warm, and ſome other ſymptoms, all ſhew that the energy of the brain is, on this occaſion, greatly weakened ; and I preſume, that, as the weakneſs of the action of the heart can hardly be imputed to any other cauſe, this weakneſs alſo is a proof of the diminiſhed energy of the brain.

36. I ſhall hereafter endeavour to ſhew, that the moſt noted of the remote cauſes of fever, as contagion, miaſmata, cold, and fear, are of a ſedative nature, and therefore render it probable that a debility is induced. Likewiſe, when the paroxyſms of a fever have ceaſed to be repeated, they may again be renewed, and are moſt commonly renewed by the application of debilitating

powers *. And, further, the debility which ſubſiſts in the animal motions and other functions through the whole of the fever, renders it pretty certain that ſedative or debilitating powers have been applied to the body.

37. It is therefore evident, that there are three ſtates which always take place in fever; a ſtate of debility, a ſtate of cold, and a ſtate of heat; and as theſe three ſtates regularly and conſtantly ſucceed each other in the order we have mentioned them, it is preſumed that they are in the ſeries of cauſe and effect with reſpect to one another. This we hold as a matter of fact, even although we ſhould not be able to explain in what manner, or by what mechanical means,

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* A purge adminiſtered ſix or ſeven days after the appearance of any paroxyſm, has frequently occaſioned a relapſe, and is a practice that ought to be carefully avoided. I have generally found that purges given in the beginning of the diſeaſe, increaſe the difficulty of curing it.

means, theſe ſtates ſeverally produce each other.

38. How the ſtate of debility produces ſome of the ſymptoms of the cold ſtage, may perhaps be readily explained; but how it produces all of them, I cannot explain otherwiſe than by referring the matter to a general law of the animal œconomy, whereby it happens, that powers which have a tendency to hurt and deſtroy the ſyſtem, often excite ſuch motions as are ſuited to obviate the effects of the noxious power. This is the VIS MEDICATRIX NATURÆ, ſo famous in the ſchools of phyſic; and it ſeems probable, that many of the motions excited in fever are the effects of this power.

39. That the increaſed action of the heart and arteries, which takes place in the hot ſtage of fevers, is to be conſidered as an effort of the *vis medicatrix naturæ*, has been long a common opinion among phyſicians;

and I am diſpoſed to aſſert, that ſome part of the cold ſtage may be imputed to the ſame power. I judge ſo, becauſe the cold ſtage appears to be univerſally a means of producing the hot; becauſe cold externally applied has very often ſimilar effects; and more certainly ſtill, becauſe it ſeems to be in proportion to the degree of tremor in the cold ſtage, that the hot ſtage proceeds more or leſs quickly to a termination of the paroxyſm, and to a more complete ſolution and longer intermiſſion. See 30.

40. It is to be particularly obſerved, that, during the cold ſtage of fever, there ſeems to be a ſpaſm induced every where on the extremities of the arteries, and more eſpecially of thoſe upon the ſurface of the body. This appears from the ſuppreſſion of all excretions, and from the ſhrinking of the external parts: And although this may perhaps be imputed, in part, to the weaker action of the heart, in propelling the blood into the extreme veſſels; yet, as theſe ſymptoms

toms often continue after the action of the heart is reſtored, there is reaſon to believe, that a ſpaſmodic conſtriction has taken place; that it ſubſiſts for ſome time, and ſupports the hot ſtage; for this ſtage ceaſes with the flowing of the ſweat, and the return of other excretions, which are marks of the relaxation of veſſels formerly conſtricted. Hoffman. Med. rat. Syſtem. Tom. 4. p. 1. ſect. 1. cap. 1. art. 4.

41. The idea of fever, then, may be, that a ſpaſm of the extreme veſſels, however induced, proves an irritation to the heart and arteries; and that this continues till the ſpaſm is relaxed or overcome. There are many appearances which ſupport this opinion; and there is little doubt that a ſpaſm does take place, which proves an irritation to the heart, and therefore may be conſidered as a principal part in the proximate cauſe of fever. It will ſtill, however, remain a queſtion, what is the cauſe of this ſpaſm; whether it be directly

produced by the remote cauſes of fever, or if it be only a part of the operation of the *vis medicatrix naturæ.*

42. I am diſpoſed to be of the latter opinion, becauſe, in the *firſt* place, while it remains ſtill certain that a debility lays the foundation of fever, it is not obvious in what manner the debility produces the ſpaſm, and, what ſeems to be its effect, the increaſed action of the heart and arteries; and, *ſecondly*, becauſe, in almoſt all the caſes in which an effort is made by the *vis medicatrix naturæ*, a cold fit and a ſpaſm of the extreme veſſels are almoſt always the beginning of ſuch an effort. See Gaub. Pathol. Medicin. art. 750.

43. It is therefore preſumed, that ſuch a cold fit and ſpaſm at the beginning of fever, is a part of the operation of the *vis medicatrix*; but, at the ſame time, it ſeems to me probable, that during the whole courſe of the fever, there is an atony ſub-

ſiſting in the extreme veſſels, and that the relaxation of the ſpaſm requires the reſtoring of the tone and action of theſe.

44. This it may be difficult to explain; but I think it may be aſcertained as a fact, by the conſideration of the ſymptoms which take place with reſpect to the functions of the ſtomach in fevers, ſuch as the anorexia, nauſea, and vomiting, (14.)

From many circumſtances it is ſufficiently certain, that there is a conſent between the ſtomach and ſurface of the body; and in all caſes of the conſent of diſtant parts, it is preſumed to be by the connection of the nervous ſyſtem, and that the conſent which appears is between the ſentient and moving fibres of the one part with thoſe of the other; is ſuch, that a certain condition prevailing in the one part occaſions a ſimilar condition in the other.

In the caſe of the ſtomach and ſurface of the body, the conſent particularly appears by the connection which is obſerved between the ſtate of the perſpiration and the ſtate of the appetite in healthy perſons; and if it may be preſumed that the appetite depends upon the ſtate of tone in the muſcular fibres of the ſtomach, it will follow, that the connection of appetite and perſpiration depends upon a conſent between the muſcular fibres of the ſtomach, and the muſcular fibres of the extreme veſſels, or of the organ of perſpiration on the ſurface of the body.

It is further in proof of the connection between the appetite and perſpiration, and at the ſame time of the circumſtances on which it depends, that cold applied to the ſurface of the body, when it does not ſtop perſpiration, but proves a ſtimulus to it, is always a powerful means of exciting appetite.

Having thus eſtabliſhed the connection or conſent mentioned, we argue, that as the ſymptoms of anorexia, nauſea, and vomiting, in many caſes, manifeſtly depend upon a ſtate of debility or loſs of tone in the muſcular fibres of the ſtomach; ſo it may be preſumed, that theſe ſymptoms, in the beginning of fever, depend upon an atony communicated to the muſcular fibres of the ſtomach from the muſcular fibres of the extreme veſſels on the ſurface of the body.

That the debility of the ſtomach which produces vomiting in the beginning of fevers actually depends upon an atony of the extreme veſſels on the ſurface of the body, appears particularly from a fact obſerved by Dr Sydenham. In the attack of the plague, a vomiting happens, which prevents any medicine from remaining on the ſtomach: And Dr Sydenham tells us, that in ſuch caſes he could not overcome this vomiting but by external means applied to produce a ſweat; that is, to excite the action of the veſſels on the ſurface of the body.

The ſame connection between the ſtate of the ſtomach and that of the extreme veſſels on the ſurface of the body, appears from this alſo, that the vomiting, which ſo frequently happens in the cold ſtage of fevers, commonly ceaſes upon the coming on of the hot, and very certainly upon any ſweat's coming out, (14). It is indeed probable, that the vomiting in the cold ſtage of fevers, is one of the means employed by nature for reſtoring the determination to the ſurface of the body; and it is a circumſtance affording proof, both of this, and of the general connection between the ſtomach and ſurface of the body, that emetics thrown into the ſtomach, and operating there, in the time of the cold ſtage, commonly put an end to it, and bring on the hot ſtage.

It alſo affords a proof of the ſame connection, that cold water taken into the ſtomach produces an increaſe of heat on the ſurface of the body, and is very often a convenient and effectual means of producing ſweat.

From the whole we have now ſaid on this ſubject, I think it is ſufficiently probable, that the ſymptoms of anorexia, nauſea, and vomiting, depend upon, and are a proof of, an atony ſubſiſting in the extreme veſſels on the ſurface of the body; and that this atony, therefore, now aſcertained as a matter of fact, may be conſidered as a principal circumſtance in the proximate cauſe of fever.

45. This atony * we ſuppoſe to depend upon a diminution of the energy of the brain; and that this diminution takes place in fevers, we conclude, not only from the debility prevailing in ſo many of the functions of the body, mentioned above, (35), but particularly from ſymptoms which are peculiar to the brain itſelf. Delirium is a frequent ſymptom of fever: And as from the phyſiology and pathology we learn, that this ſymptom commonly depends upon ſome

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* The reader will perceive, that the whole of the doctrine delivered in this chapter is hypothetical.

ſome inequality in the excitement of the brain or intellectual organ; we hence conclude, that, in fever, it denotes ſome diminution in the energy of the brain. Delirium, indeed, ſeems often to depend upon an increaſed impetus of the blood in the veſſels of the brain, and therefore attends phrenitis. It frequently appears alſo in the hot ſtage of fevers, accompanied with a headach and throbbing of the temples. But as the impetus of the blood in the veſſels of the head is often conſiderably increaſed by exerciſe, external heat, paſſions, and other cauſes, without occaſioning any delirium; ſo, ſuppoſing that the ſame impetus, in the caſe of fever, produces delirium, the reaſon muſt be, that at the ſame time there is ſome cauſe which diminiſhes the energy of the brain, and prevents a free communication between the parts concerned in the intellectual functions. Upon the ſame principles, alſo, I ſuppoſe there is another ſpecies of delirium, depending more entirely on the diminiſhed energy of the brain, and which may therefore ariſe when there is no unuſual increaſe of the impetus of the blood in the veſſels of the brain. Such ſeems to be the delirium occurring at the beginning of the cold ſtage of fevers, or in the hot ſtage of ſuch fevers as ſhew ſtrong marks of debility in the whole ſyſtem.

46. Upon the whole, our doctrine of fever is explicitly this: The remote cauſes (36.) are certain ſedative powers applied to the nervous ſyſtem, which, diminiſhing the energy of the brain, thereby produce a debility in the whole of the functions, (35.) and particularly in the action of the extreme veſſels, (43. 44.). Such, however, is, at the ſame time, the nature of the animal œconomy, (38.) that this debility proves an indirect ſtimulus to the ſanguiferous ſyſtem; whence, by the intervention of the cold ſtage, and ſpaſm connected with it, (39. 40.) the action of the heart and larger arteries is increaſed, (40.) and

continues ſo (41.) till it has had the effect of reſtoring the energy of the brain, of extending this energy to the extreme veſſels, of reſtoring therefore their action, and thereby eſpecially overcoming the ſpaſm affecting them; upon the removing of which, the excretion of ſweat, and other marks of the relaxation of excretories, take place.

47. This doctrine will, as I ſuppoſe, ſerve to explain not only the nature of fever in general, but alſo the various caſes of it which occur. Before proceeding, however, to this, it may be proper to point out the opinions, and, as I apprehend, the miſtakes, which have formerly prevailed on this ſubject.

48. It has been ſuppoſed, that a lentor or viſcidity prevailing in the maſs of blood, and ſtagnating in the extreme veſſels, is the cauſe of the cold ſtage of fevers and its conſequences. But there is no evidence

of any ſuch viſcidity previouſly ſubſiſting in the fluids; and, as it is very improbable that ſuch a ſtate of them can be very quickly produced, ſo the ſuddenneſs with which paroxyſms come on renders it more likely that the phenomena depend upon ſome cauſe acting upon the nervous ſyſtem, or the primary moving powers of the animal œconomy. See Van Swieten apud Boerh. Aph. 755.

49. Another opinion, which has been almoſt univerſally received, is, that a noxious matter introduced into, or generated in, the body, is the proximate cauſe of fever; and that the increaſed action of the heart and arteries, which form ſo great a part of the diſeaſe, is an effort of the *vis medicatrix naturæ* to expel this morbific matter; and particularly to change or concoct it, ſo as to render it either altogether innocent, or, at leaſt, fit for being more eaſily thrown out of the body. This doctrine, however, although of as great antiquity as any of the

records of phyſic now remaining, and although it has been received by almoſt every ſchool of medicine, yet appears to me to reſt upon a very uncertain foundation. There are fevers produced by cold, fear, and other cauſes, accompanied with all the eſſential circumſtances of fever, and terminating by ſweat; but, at the ſame time, without any evidence or ſuſpicion of morbific matter.

There have been fevers ſuddenly cured by a hemorrhagy, ſo moderate as could not carry out any conſiderable portion of a matter diffuſed over the whole maſs of blood; nor can we conceive how the morbific matter could be collected or determined to paſs by ſuch an outlet as in that caſe is opened.

Even ſuppoſing a morbific matter were preſent, there is no explanation given in what manner the concoction of it is performed; nor is it ſhewn that any ſuch change does in fact take place. In certain caſes it is indeed evident, that a noxious matter is introduced into the body, and proves the cauſe of fever: But, even in theſe caſes, it appears that the noxious matter is thrown out again, without having ſuffered any change; that the fever often terminates before the matter is expelled; and that, upon many occaſions, without waiting the ſuppoſed time of concoction, the fever can be cured, and that by remedies which do not ſeem to operate upon the fluids, or to produce any evacuation.

50. While we thus reaſon againſt the notion of fever being an effort of nature, for concocting and expelling a morbific matter, I by no means intend to deny that the cauſe of fever frequently operates upon the fluids, and particularly produces a putreſcent ſtate of them. I acknowledge that this is frequently the caſe: But, at the ſame time, I maintain, that ſuch a change of the fluids is not commonly the cauſe of fever; that very often it is an effect only; and that there is no reaſon to

believe the termination of the fever to depend upon the expulſion of the putrid matter.

51. Another opinion which has prevailed, remains ſtill to be mentioned. In intermittent fevers, a great quantity of bile is commonly thrown out by vomiting; and this is ſo frequently the caſe, that many have ſuppoſed an unuſual quantity of bile, and perhaps a peculiar quality of it, to be the cauſe of intermittent fevers. This, however, does not appear to be well founded. Vomiting, by whatever means excited, if often repeated, with violent ſtraining, ſeems to be powerful in emulging the biliary ducts, and commonly throws out a great deal of bile. This will happen eſpecially in the caſe of intermittent fevers: For, as in the ſtate of debility and cold ſtage of theſe fevers, the blood is not propelled in the uſual quantity into the extreme veſſels, and particularly into thoſe on the ſurface of the body, but is accu-

mulated in the veſſels of the internal parts, and particularly in the vena portarum; ſo this may occaſion a more copious ſecretion of bile.

Theſe conſiderations will, in ſome meaſure, account for the appearance of an unuſual quantity of bile in intermittent fevers; but the circumſtance which chiefly occaſions the appearance of bile in theſe caſes, is the influence of warm climates and ſeaſons. Theſe ſeldom fail to produce a ſtate of the human body, in which the bile is diſpoſed to paſs off, by its ſecretories, in greater quantity than uſual; and perhaps alſo changed in its quality, as appears from the diſeaſe of cholera, which ſo frequently occurs in warm ſeaſons. At the ſame time, this diſeaſe occurs often without fever; and we ſhall hereafter render it ſufficiently probable, that intermittent fevers, for the moſt part, ariſe from another cauſe, that is, from marſh effluvia; while, on the other hand, there is no evidence of their ariſing from the ſtate of the bile alone. The marſh effluvia, however, commonly operate moſt powerfully in the ſame ſeaſon that produces the change and redundance of the bile; and therefore, conſidering the vomiting, and other circumſtances of the intermittent fevers which here concur, it is not ſurpriſing that autumnal intermittents are ſo often attended with effuſions of bile.

This view of the ſubject does not lead us to conſider the ſtate of the bile as the cauſe of intermittents, but merely as a circumſtance accidentally concurring with them, from the ſtate of the ſeaſon in which they ariſe. What attention this requires in the conduct of the diſeaſe, I ſhall conſider hereafter.

52. From this view of the principal hypotheſes which have hitherto been maintained with reſpect to the proximate cauſe of fever, it will appear, that fevers do not ariſe from changes in the ſtate of the fluids; but that, on the contrary, almoſt the whole

of the phenomena of fevers lead us to believe, that they chiefly depend upon changes in the ſtate of the moving powers of the animal ſyſtem. Though we ſhould not be able to explain all the circumſtances of the diſeaſe, it is at leaſt of ſome advantage to be led into the proper train of inveſtigation. I have attempted to purſue it, and ſhall now endeavour to apply the doctrine already delivered, towards explaining the diverſity of fevers.

CHAP. III.

OF THE DIFFERENCE OF FEVERS AND ITS CAUSES.

53. TO aſcertain the difference of fevers, I think it neceſſary to obſerve, in the firſt place, that every fever of more than one day's duration, conſiſts of repeated, and in ſome meaſure ſeparate, paroxyſms; and that the difference of fevers taken notice of above (from 25. to 30.) appears to conſiſt in the different ſtate of paroxyſms, and in the different circumſtances of their repetition.

54. That fevers generally conſiſt of diſtinct, and, in ſome meaſure, ſeparately repeated,

peated, paroxyſms, I have alleged above to be a matter of fact; but I ſhall here endeavour to confirm it, by aſſigning the cauſe.

55. In every fever, in which we can diſtinctly obſerve any number of ſeparate paroxyſms, we conſtantly find that each paroxyſm is finiſhed in leſs than twenty-four hours; but as I cannot perceive any thing in the cauſe of fevers determining to this, I muſt preſume it to depend on ſome general law * of the animal œconomy. Such a law ſeems to be that which ſubjects the œconomy, in many reſpects, to a diurnal revolution. Whether this depends upon the original conformation of the body, or upon certain powers conſtantly applied to it, and inducing a habit, I cannot poſitively determine: But the returns of ſleep and

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* The reader will find entertainment in admiring the ingenuity of the author, in contriving ſeveral artifices for maintaining his doctrine. One hypotheſis piled on the top of another, almoſt without end.

and watching, of appetites and excretions, and the changes which regularly occur in the ſtate of the pulſe, ſhew ſufficiently, that in the human body a diurnal revolution takes place.

56. It is this diurnal revolution, which, I ſuppoſe, determines the duration of the paroxyſms of fevers; and the conſtant and univerſal limitation of theſe paroxyſms, (as obſerved in 55.) while no other cauſe of it can be aſſigned, renders it ſufficiently probable that their duration depends upon, and is determined by, the revolution mentioned. And that theſe paroxyſms are connected with that diurnal revolution, appears further from this, that though the intervals of paroxyſms are different in different caſes, yet the times of the acceſſion of paroxyſms are generally fixed to one time of the day; ſo that quotidians come on in the morning, tertians at noon, and quartans in the afternoon.

57. It remains to be remarked, that as quartans and tertians are apt to become quotidians, theſe to paſs into the ſtate of remittents, and theſe laſt to become continued; and that even in the continued form, daily exacerbations and remiſſions are generally to be obſerved: So all this ſhews ſo much the power of diurnal revolution, that when, in certain caſes, the daily exacerbations and remiſſions are with difficulty diſtinguiſhed, we may ſtill preſume, that the general tendency of the œconomy prevails, that the diſeaſe ſtill conſiſts of repeated paroxyſms, and, upon the whole, that there is no ſuch diſeaſe as that which the ſchools have called a continued fever. I expect that this doctrine will be confirmed by what I ſhall ſay hereafter concerning the periodical movements obſerved in continued fevers.

58. It being thus proved, that every fever, of more than one day's duration. conſiſts of repeated paroxyſms; we, in the

next place, remark, that the repetition of paroxyſms depends upon the circumſtances of the paroxyſms which have already taken place. From what was obſerved in 30. and 31. it appears, that the longer paroxyſms are protracted, they are the ſooner repeated; and, therefore, that the cauſe of the frequent repetition is to be ſought for in the cauſe of the protraction of paroxyſms.

59. Agreeable to what is laid down in 46. and to the opinion of moſt part of phyſicians, I ſuppoſe, that, in every fever, there is a power applied to the body, which has a tendency to hurt and deſtroy it, and produces in it certain motions which deviate from the natural ſtate; and, at the ſame time, in every fever which has its full courſe, I ſuppoſe, that, in conſequence of the conſtitution of the animal œconomy, there are certain motions excited, which have a tendency to obviate the effects of the noxious power, or to correct and re-

move them. Both theſe kinds of motion are conſidered as conſtituting the diſeaſe.

But the former is perhaps ſtrictly the morbid ſtate, while the latter is to be conſidered as the operation of the *vis medicatrix naturæ*, of ſalutary tendency, and which I ſhall hereafter call the REACTION of the ſyſtem.

60. Upon the ſuppoſition that theſe two ſtates take place in every paroxyſm of fever, it will appear to be chiefly in the time of the hot ſtage that the reaction operates in removing the morbid ſtate; and therefore, as this operation ſucceeds more or leſs quickly, the hot ſtage of paroxyſms will be ſhorter or longer. But as the length of paroxyſm depends chiefly upon the duration of the hot ſtage, ſo the longer duration of this and of paroxyſms, muſt be owing either to the obſtinacy of reſiſtance in the morbid ſtate, or to the weakneſs of the ſalutary reaction; and it is probable

that ſometimes the one and ſometimes the other of theſe circumſtances takes place.

61. It ſeems to be only by the ſtate of the ſpaſm, that we can judge of the reſiſtance of the morbid ſtate of fever: And with reſpect to this ſpaſm I obſerve, that either the cauſe exciting it may be different in different caſes; or, though the cauſe ſhould be the ſame in different perſons, the different degree of irritability in each may give occaſion to a greater or leſſer degree of ſpaſm; and therefore, the reaction in fever being given, the continuance of the hot ſtage, and of the whole paroxyſm, may be longer or ſhorter, according to the degree of ſpaſm that has been formed.

62. One cauſe of the obſtinacy of ſpaſm in fevers may be clearly perceived. In inflammatory diſeaſes, there is a diatheſis phlogiſtica prevailing in the body, and this diatheſis we ſuppoſe to conſiſt in an increaſed tone of the whole arterial ſyſtem.

When, therefore, this diatheſis accompanies fever, as it ſometimes does, it may be ſuppoſed to give occaſion to the febrile ſpaſm's being formed more ſtrongly, and thereby to produce more protracted paroxyſms. Accordingly we find, that all inflammatory fevers are of the continued kind; and that all the cauſes of the diatheſis phlogiſtica have a tendency to change intermittent into continued fevers. Continued fevers, then, being often attended with the diatheſis phlogiſtica, we conclude, that, in many caſes, this is the cauſe of their continued form.

63. In many fevers, however, there is no evidence of any diatheſis phlogiſtica being preſent, nor of any other cauſe of more conſiderable ſpaſm; and, in ſuch caſes, therefore, we muſt impute the protraction of paroxyſms, and the continued form of the fever, to the weakneſs of reaction. That this cauſe takes place, we conclude from hence, that, in many caſes of fever,

wherein the ſeparate paroxyſms are the longeſt protracted, and the moſt difficultly obſerved, we find the moſt conſiderable ſymptoms of a general debility: And therefore we infer, that, in ſuch caſes, the protracted paroxyſms, and continued form, depend upon a weaker reaction; owing either to the cauſes of debility applied having been of a more powerful kind, or from circumſtances of the patient's conſtitution favouring their operation.

64. Upon theſe principles we make a ſtep towards explaining in general, with ſome probability, the difference of fevers; but muſt own, that there is much doubt and difficulty in applying the doctrine to particular caſes. It applies tolerable well to explain the different ſtates of intermittents, as they are more purely ſuch, or as they approach more and more to the continued form: But ſeveral difficulties ſtill remain with reſpect to many circumſtances of intermittents; and more ſtill with re-

ſpect to the difference of thoſe continued fevers, which we have diſtinguiſhed in our Noſology as different from intermittents, and as more eſpecially intitled to the appellation of Continued, (ſee Syn. Noſ. Meth. part 5. ch. 1. ſect. 2.), and explained more fully above.

65. From the view given (63. and 64.) of the cauſes of the protraction of paroxyſms, and therefore of the form of continued fevers, ſtrictly ſo called, it ſeems probable, that the remote cauſes of theſe operate by occaſioning either a phlogiſtic diatheſis, or a weaker reaction; for we can obſerve, that the moſt obvious difference of continued fevers depends upon the prevalence of one or other of theſe ſtates.

66. Continued fevers have been accounted of great diverſity; but phyſicians have not been ſucceſsful in marking theſe differences, or in reducing them to any general heads. The diſtinctions made by the antients are not well underſtood; and, ſo far

as either they or the modern noſologiſts have diſtinguiſhed continued fevers by a difference of duration, their diſtinctions are not well founded, and do not apply in ſuch a manner as to be of any uſe. We think it agreeable to obſervation, and to the principles above laid down, (63. 64.) to diſtinguiſh continued fevers according as they ſhew either an inflammatory irritation, or a weaker reaction.

67. This diſtinction is the ſame with that of fevers into the INFLAMMATORY and NERVOUS; the diſtinction at preſent moſt generally received in Britain. To the firſt, as a genus, I have given the name of Synocha; to the ſecond, that of Typhus; and, little ſtudious whether theſe names be authoriſed by the ancient uſe of the ſame terms, I depend upon their being underſtood by the characters * annexed

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* Theſe characters are,

Synocha. Calor plurimum auctus; pulſus frequens, validus, nexed to them in our Noſology, which I apprehend to be founded on obſervation.

68. By theſe characters I think continued fevers may in practice be diſtinguiſhed; and if that be the caſe, the principles above laid down will be confirmed.

69. Beſide theſe differences of continued fever, now mentioned, I am not certain of having obſerved any other that can be conſidered as fundamental. But the moſt common form of continued fevers, in this climate, ſeems to be a combination of theſe two genera; and I have therefore given ſuch a genus a place in our Noſology, under the title of Synochus. At the ſame time, I think that the limits between the Synochus

validus, et durus; urina rubra; ſenſorii functiones parum turbatæ.

Typhus. Morbus contagioſus; calor parum auctus; pulſus parvus, debilis, plerumque frequens; urina parum mutata; ſenſorii functiones plurimum turbatæ; vires multum imminutæ.

Synochus and Typhus will be with difficulty aſſigned; and I am diſpoſed to believe, that the Synochus ariſes from the ſame cauſes as the Typhus, and is therefore only a variety of it.

70. The Typhus ſeems to be a genus comprehending ſeveral ſpecies. Theſe, however, are not yet well aſcertained by obſervation; and in the mean time we can perceive that many of the different caſes obſerved do not imply any ſpecific difference, but ſeem to be merely varieties, ariſing from a different degree of power in the cauſe, from different circumſtances of the climate or ſeaſon in which they happen, or from different circumſtances in the conſtitution of the perſons affected.

71. Some of the effects ariſing from theſe circumſtances require to be particularly explained.

One is, an unuſual quantity of bile appearing in the courſe of the diſeaſe. This abundance of bile may poſſibly attend ſome continued fevers, ſtrictly ſo called; but, for the reaſons above explained, it more commonly attends intermittents, and, we believe, it might have been enumerated (29.) among the marks diſtinguiſhing the latter kind of fevers from the former. But, though an unuſual quantity of bile ſhould appear with continued fevers, it is conſidered in this caſe, as in that of intermittents, to be a coincidence only, owing to the ſtate of the ſeaſon, and producing no different ſpecies or fundamental diſtinction, but merely a variety of the diſeaſe. I think it proper to obſerve here, that it is probable that the moſt part of the continued fevers named Bilious, have been truly ſuch as belong to the ſection of Intermittents.

72. Another effect of the circumſtances occaſionally varying the appearance of typhus, is a putreſcent ſtate of the fluids. The antients, and likewiſe the moderns, who are

in general much diſpoſed to follow the former, have diſtinguiſhed fevers as putrid and non-putrid: But the notions of the antients on this ſubject were not ſufficiently correct to deſerve much notice; and it is only of late that the matter has been more accurately obſerved, and better explained.

From the diſſolved ſtate of the blood, as it preſents itſelf when drawn out of the veins, or as it appears from the red blood's being diſpoſed to be effuſed and run off by various outlets, and from ſeveral other ſymptoms to be hereafter mentioned, I have now no doubt, how much ſoever it has been diſputed by ſome ingenious men, that a putreſcency of the fluids to a certain degree does really take place in many caſes of fever. This putreſcency, however, often attends intermittent, as well as continued fevers; and, of the continued kind, both the ſynochus and typhus, and all of them in very different degrees; ſo that, whatever attention it may deſerve in practice, there is no fixing ſuch limits to it as to admit of eſtabliſhing a ſpecies under the title of PUTRID.

73. Beſide differing by the circumſtances already mentioned, fevers differ alſo by their being accompanied with ſymptoms which belong to diſeaſes of the other orders of pyrexiæ. This ſometimes happens in ſuch a manner, as to render it difficult to determine which of the two is the primary diſeaſe. Commonly, however, it may be aſcertained by the knowledge of the remote cauſe, and of the prevailing epidemic, or by obſerving the ſeries and ſucceſſion of ſymptoms.

74. Moſt of our ſyſtems of phyſic have marked, as a primary one, a ſpecies of fever under the title of HECTIC; but, as it is deſcribed, I have never ſeen it as a primary diſeaſe. I have conſtantly found it as a ſymptom of ſome topical affection, moſt commonly of an internal ſuppuration; and

as ſuch it ſhall be conſidered in another place.

75. The diſtinction of the ſeveral caſes of intermittent fever I have not proſecuted here; both becauſe we cannot aſſign the cauſes of the differences which appear, and becauſe I apprehend that the differences which in fact occur may be readily underſtood from what is ſaid above (25. 26. and 27.) and more fully from our Methodical Noſology, Cl. 1. ſect. 1.

CHAP. IV.

OF THE REMOTE CAUSES OF FEVER.

76. AS fever has been held to conſiſt chiefly in an increaſed action of the heart and arteries, phyſicians have ſuppoſed its remote cauſes to be certain direct ſtimulants fitted to produce this increaſed action. In many caſes, however, there is no evidence of ſuch ſtimulants being applied; and, in thoſe in which they are applied, they either produce only a temporary frequency of the pulſe, which cannot be conſidered as a diſeaſe; or, if they do produce a permanent febrile ſtate, it is by the intervention of a topical inflammation,

which produces a diſeaſe different from what is ſtrictly called fever. (8.)

77. That direct ſtimulants are the remote cauſes of fever, ſeems farther improbable; becauſe the ſuppoſition does not account for the phenomena attending the acceſſion of fevers, and becauſe other remote cauſes can with greater certainty be aſſigned.

78. As fevers are ſo generally epidemic, it is probable, that ſome matter floating in the atmoſphere, and applied to the bodies of men, ought to be conſidered as the remote cauſe of fevers: And theſe matters preſent in the atmoſphere, and thus acting upon men, may be conſidered, either as CONTAGIONS, that is, effluvia ariſing directly or originally from the body of a man under a particular diſeaſe, and exciting the ſame kind of diſeaſe in the body of the perſon to whom they are applied; or MIASMATA, that is, effluvia ariſing from other ſubſtances than the bodies of men, produ-

cing a diſeaſe in the perſon to whom they are applied.

79. Contagions have been ſuppoſed to be of great variety; and it is poſſible this may be the caſe: But that they truly are ſo, does not appear clearly from any thing we know at preſent. The genera and ſpecies of contagious diſeaſes, of the claſs of pyrexiæ, at preſent known, are in number not very great. They chiefly belong to the order of fevers, to that of exanthemata, or that of profluvia. Whether there be any belonging to the order of phlegmaſiæ, is doubtful; and though there ſhould, it will not much increaſe the number of contagious pyrexiæ. Of the contagious exanthemata and profluvia, the number of ſpecies is nearly aſcertained; and each of them is ſo far of a determined nature, that though they have now been obſerved and diſtinguiſhed for many ages, and in many different parts of the world, they have been always found to retain the ſame general

character, and to differ only in circumſtances, that may be imputed to ſeaſon, climate, and other external cauſes, or to the peculiar conſtitutions of the ſeveral perſons affected. It ſeems, therefore, probable, that, in each of theſe ſpecies, the contagion is of one ſpecific nature; and that the number of contagious exanthemata or profluvia is hardly greater than the number of ſpecies enumerated in the ſyſtems of noſology.

80. If, while the contagious exanthemata and profluvia are thus limited, we ſhould ſuppoſe the contagious pyrexiæ to be ſtill of great and unlimited variety, it muſt be with reſpect to the genera and ſpecies of continued fevers. But if I be right in limiting, as I have done, the genera of theſe fevers, (67.—70.) it will appear likely that the contagions which produce them are not of great variety; and this will be much confirmed, if we can render it probable that there is one principal, perhaps one common, ſource of ſuch contagions.

81. To this purpoſe it is now well known, that the effluvia conſtantly ariſing from the living human body, if long retained in the ſame place, without being diffuſed in the atmoſphere, acquire a ſingular virulence; and, in that ſtate, being applied to the bodies of men, become the cauſe of a fever which is highly contagious.

The exiſtence of ſuch a cauſe is fully proved by the late obſervations on jail and hoſpital fevers: And that the ſame virulent matter may be produced in many other places, muſt be ſufficiently obvious: And it is probable that the contagion ariſing in this manner, is not, like many other contagions, permanent and conſtantly exiſting; but that, in the circumſtances mentioned, it is occaſionally generated. At the ſame time, the nature of the fevers from thence, upon different occaſions, ariſing, renders it probable, that the virulent ſtate of human effluvia is the common cauſe of them, as they differ only in a ſtate of their ſymptoms; which may be imputed to the circumſtances of ſeaſon, climate, &c. concurring with the contagion, and modifying its force.

82. With reſpect to theſe contagions, though we have ſpoken of them as of a matter floating in the atmoſphere, it is proper to obſerve, that they are never found to act but when they are near to the ſources from whence they ariſe; that is, either near to the bodies of men, from which they immediately iſſue; or near to ſome ſubſtances which, as having been near to the bodies of men, are imbued with their effluvia, and in which ſubſtances theſe effluvia are ſometimes retained in an active ſtate for a very long time.

The ſubſtances thus imbued with an active and infectious matter, may be called *Fomites*; and it appears to me probable, that contagions, as they ariſe from fomites, are more powerful than as they ariſe immediately from the human body.

83. Miaſmata are next to be conſidered. Theſe may ariſe from various ſources and be of different kinds; but we know little of their variety, or of their ſeveral effects. We know with certainty only one ſpecies of miaſma, which can be conſidered as the cauſe of fever; and, from the univerſality of this, it may be doubted if there be any other.

84. The miaſma, ſo univerſally the cauſe of fever, is that which ariſes from marſhes or moiſt ground, acted upon by heat. So many obſervations have now been made with reſpect to this in ſo many different regions of the earth, that there is neither any doubt of its being in general a cauſe of fevers, nor of its being very univerſally the cauſe of intermittent fevers, in all their different forms. The ſimilarity of the climate, ſeaſon, and ſoil, in the different countries in which intermittents ariſe, and the ſimilarity of the diſeaſes, though ariſing in diffe-

rent regions, concur in proving. that there is one common cauſe of theſe diſeaſes, and that this is the marſh miaſma.

What is the particular nature of this miaſma, we know not; nor do we certainly know whether or not it differs in kind: But it is probable that it does not; and that it varies only in the degree of its power, or perhaps as to its quantity, in a given ſpace.

85. It has been now rendered probable, that the remote cauſes of fevers (8.) are chiefly contagions or miaſmata, and neither of them of great variety. We have ſuppoſed that miaſmata are the cauſe of intermittents, and contagions the cauſe of continued fevers, ſtrictly ſo named; but we cannot with propriety employ theſe general terms. For, as the cauſe of continued fevers may ariſe from fomites, and may, in ſuch caſes, be called a miaſma; and as other miaſmata alſo may produce contagious diſeaſes, it will be proper to diſtinguiſh the

cauſes of fevers, by uſing the terms *Human* or *Marſh Effluvia*, rather than the general ones of Contagion or Miaſma.

86. To render our doctrine of fever conſiſtent and complete, it is neceſſary to add here, that thoſe remote cauſes of fever, human and marſh effluvia, ſeem to be of a debilitating or ſedative quality. They ariſe from a putreſcent matter. Their production is favoured, and their power increaſed, by circumſtances which favour putrefaction, and they often prove putrefactive ferments with reſpect to the animal fluids. As putrid matter, therefore, is always, with reſpect to animal bodies, a powerful ſedative, ſo it can hardly be doubted, that human and marſh effluvia are of the ſame quality; and it is confirmed by this, that the debility which is always induced, ſeems to be in proportion to the other marks that appear of the power of thoſe cauſes.

87. Though we have endeavoured to ſhew that fevers generally ariſe from marſh or human effluvia, we cannot, with any certainty, exclude ſome other remote cauſes, which are commonly ſuppoſed to have at leaſt a ſhare in producing thoſe diſeaſes. And I proceed, therefore, to enquire concerning theſe cauſes; the firſt of which that merits attention, is the power of cold applied to the human body.

88. The operation of cold on a living body, is ſo different in different circumſtances, as to be of difficult explanation; it is here, therefore, attempted with ſome diffidence.

The power of cold may be conſidered as abſolute or relative.

The *abſolute* power is that by which it can diminiſh the temperature of the body to which it is applied. And thus, if the natural temperature of the human body is, as we ſuppoſe it to be, that of 98 degrees of

Farenheit's thermometer *; every degree of temperature leſs than that, may be conſidered as cold with reſpect to the human body; and, in proportion to its degree, will have a tendency to diminiſh the temperature of the body. But as the living human body has in itſelf a power of generating heat, ſo it can ſuſtain its own proper heat to the degree above mentioned, though ſurrounded by air or other bodies of a lower temperature than itſelf; and it appears from obſervation, that, in this climate, air, or other bodies applied to the living man, do not diminiſh the temperature of his body, unleſs the temperature of the body applied be below 62 degrees. From hence it appears, that the abſolute power of cold in this climate, does not act upon the living human body, unleſs the cold applied be below the degree juſt now mentioned.

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* In every inſtance of our mentioning degrees of heat or cold, we ſhall mention them by the degrees in Farenheit's ſcale; and the expreſſion of higher or lower ſhall always be according to that ſcale.—Author.

It appears alſo, that the human body's being ſurrounded by air of a lower temperature than itſelf, is neceſſary to its being retained in its proper temperature of 98 degrees: For, in this climate, every temperature of the air above 62 degrees, applied to the human body, though ſtill of a lower temperature than itſelf, is found to increaſe the heat of it. And from all this it appears, that the abſolute power of cold with reſpect to the human body, is very different from what it is with reſpect to inanimate bodies.

89. The *relative* power of cold with reſpect to the living human body, is that power by which it produces a ſenſation of cold in it; and with reſpect to this, it is agreeable to the general principle of ſenſation, that the ſenſation produced, is not in proportion to the abſolute force of impreſſion, but according as the new impreſſion is ſtronger or weaker than that which had been applied immediately before. Accordingly,

dingly, with reſpect to temperature, the ſenſation produced by any degree of this, depends upon the temperature to which the body had been immediately before expoſed; ſo that whatever is higher than this feels warm, and whatever is lower than it, feels cold; and it will therefore happen that the oppoſite ſenſations of heat and cold may on different occaſions ariſe from the ſame temperature, as marked by the thermometer.

With reſpect to this, however, it is to be obſerved, that though every degree of temperature gives a ſenſation of cold or heat, as it is lower or higher than the temperature applied immediately before, the ſenſation produced is in different caſes of different duration. If the temperature at any time applied is under 62 degrees, every increaſe of temperature applied will give a ſenſation of heat; but if the increaſe of temperature does not ariſe to 62 degrees, the ſenſation produced will not continue long, but be ſoon changed to a ſenſation of cold. In like manner, any temperature applied to the human body, lower than that of the body itſelf, gives a ſenſation of cold; but if the temperature applied does not go below 62 degrees, the ſenſation of cold will not continue long, but be ſoon changed to a ſenſation of heat.

It will appear hereafter, that the effects of the ſenſation of cold will be very different, according as it is more permanent or tranſitory.

90. Having thus explained the operation of cold as abſolute or relative with reſpect to the human body, I proceed to mention the general effects of cold upon it.

1. Cold, in certain circumſtances, has manifeſtly a *ſedative* power. It can extinguiſh the vital principle entirely, either in particular parts, or in the whole body; and conſidering how much the vital principle of animals depends upon heat, it cannot be doubted that the power of cold is always more or leſs directly ſedative.

This effect may be ſaid to take place from every degree of abſolute cold; and, when the heat of the body has upon any occaſion been preternaturally increaſed, every lower temperature may be uſeful in diminiſhing the activity of the ſyſtem; but it cannot diminiſh the natural vigor of the vital principle, till the cold applied is under 62 degrees; nor even then will it have this effect, unleſs the cold applied be of an intenſe degree, or be applied for ſome length of time to a large portion of the body.

2. It is equally manifeſt, that, in certain circumſtances, cold proves a *ſtimulus* to the living body, and particularly to the ſanguiferous ſyſtem.

It is probable, that this effect takes place in every caſe in which the temperature applied produces a ſenſation of cold; and this, therefore, as depending entirely on the relative power of cold, will be in proportion to the change of temperature that takes place.

It appears to me probable, that every change of temperature, from a higher to a lower degree, will prove more or leſs ſtimulant; excepting when the cold applied is ſo intenſe, as immediately to extinguiſh the vital principle in the part.

5. Beſide the ſedative and ſtimulant powers of cold, it is manifeſtly alſo a powerful *aſtringent*, cauſing a contraction of the veſſels on the ſurface of the body, and thereby producing a paleneſs of the ſkin and a ſuppreſſion of perſpiration; and it ſeems to have ſimilar effects when applied to internal parts. It is likewiſe probable, that this conſtriction, as it takes place eſpecially in conſequence of the ſenſibility of the parts to which the cold is applied, will in ſome meaſure be communicated to other parts of the body; and that thereby the application of cold proves a *tonic* power with reſpect to the whole ſyſtem.

Theſe effects of tonic and aſtringent power ſeem to take place both from the abſolute and relative power of cold; and therefore every application of it which gives a ſenſation of cold, is, in its firſt effect, both aſtringent and ſtimulant, though the former may be often prevented from being either conſiderable or permanent when the latter immediately takes place.

91. It will be obvious, that theſe ſeveral effects of cold cannot all take place at the ſame time, but may in ſucceſſion be variouſly combined. The ſtimulant power taking place obviates the effects, at leaſt the permanency of the effects, that might otherwiſe have ariſen from the ſedative power. That the ſame ſtimulant power prevents theſe from the aſtringent, I have ſaid above; but the ſtimulant and tonic powers of cold are commonly, perhaps always, conjoined.

92. Theſe general effects of cold now pointed out are ſometimes ſalutary, frequently morbid; but it is the latter only I

am to conſider here, and they ſeem to be chiefly the following.

1. A general inflammatory diſpoſition of the ſyſtem, which is commonly accompanied with rheumatiſm or other phlegmaſiæ.

2. The ſame inflammatory diſpoſition accompanied with catarrh.

3 A gangrene of particular parts.

4. A palſy of a ſingle member.

5. A fever, or fever ſtrictly ſo called (8.) which it often produces by its own power alone; but more commonly it is only an exciting cauſe of fever, by concurring with the operation of human or marſh effluvia.

93. Cold is often applied to the human body without producing any of theſe morbid effects, and it is difficult to determine in what circumſtances it eſpecially operates in producing them. It appears to me, that the morbid effects of cold depend partly upon certain circumſtances of the cold itſelf,

and partly on certain circumſtances of the perſon to whom it is applied.

94. The circumſtances of the cold applied, which ſeem to give it effect, are, 1. The intenſity or degree of the cold; 2 The length of time during which it is applied; 3. The degree of moiſture at the ſame time accompanying it; 4. Its being applied by a wind or current of air; 5. Its being a viciſſitude, or ſudden and conſiderable change of temperature, from heat to cold.

95. The circumſtances of perſons rendering them more liable to be affected by cold, ſeem to be, 1. The weakneſs of the ſyſtem, and particularly the leſſened vigour of the circulation, occaſioned by faſting, by evacuations, by fatigue, by a laſt night's debauch, by exceſs in venery, by long watching, by much ſtudy, by reſt immediately after great exerciſe, by ſleep, and by preceding diſeaſe. 2. The body, or its parts, being deprived of their accuſtomed coverings,

ings. 3. One part of the body being expoſed to cold, while the reſt is kept in its uſual or a greater warmth.

96. The power of theſe circumſtances (95.) is demonſtrated by the circumſtances enabling perſons to reſiſt cold. Theſe are, a certain vigour of conſtitution, exerciſe of the body, the preſence of active paſſions, and the uſe of cordials.

Beſides theſe, there are other circumſtances which, by a different operation, enable perſons to reſiſt cold acting as a ſenſation; ſuch as, paſſions engaging a cloſe attention to one object, the uſe of narcotics, and that ſtate of the body in which ſenſibility is greatly diminiſhed, as in maniacs. To all which is to be added, the power of habit with reſpect to thoſe parts of the body to which cold is more conſtantly applied, which both diminiſhes ſenſibility, and increaſes the power of the activity generating heat.

97. Beſide cold, there are other powers that ſeem to be remote cauſes of fever; ſuch as fear, intemperance in drinking, exceſs in venery, and other circumſtances, which evidently weaken the ſyſtem. But whether any of theſe ſedative powers be alone the remote cauſe of fever, or if they only operate either as concurring with the operation of marſh or human effluvia, or as giving an opportunity to the operation of cold, are queſtions not to be poſitively anſwered: They may poſſibly of themſelves produce fever; but moſt frequently they operate as concurring in one or other of the ways above-mentioned.

98. Having now mentioned the chief of the remote cauſes of fevers, it may be further obſerved, that theſe will ariſe more or leſs readily, according as miaſmata and contagions are more or leſs prevailing and powerful, or as theſe are more or leſs favoured by the concurrence of cold and other ſedative powers.

CHAP. V.

OF THE PROGNOSIS OF FEVERS.

99. AS fevers (by 60.) conſiſt of both morbid and ſalutary motions and ſymptoms, the tendency of the diſeaſe to a happy or fatal iſſue, or the prognoſtic in fevers, has been eſtabliſhed by marking the prevalence of the morbid or of the ſalutary ſymptoms; and it might be properly ſo eſtabliſhed, if we could certainly diſtinguiſh between the one and the other of theſe kinds of ſymptoms: But the operation of the reaction, or ſalutary efforts of nature in curing fevers, is ſtill involved in ſo much obſcurity, that I cannot explain the ſeveral ſymptoms of it ſo clearly as to apply them

to the eſtabliſhing prognoſtics ; and this, I think, may be done better by marking the morbid ſymptoms which ſhew the tendency to death in fevers.

100. This plan of the prognoſtics in fevers muſt proceed upon our knowledge of the cauſes of death in general, and in fevers more particularly.

The cauſes of death, in general, are either direct or indirect.

The firſt are thoſe which directly attack and deſtroy the vital principle, as lodged in the nervous ſyſtem ; or deſtroy the organization of the brain immediately neceſſary to the action of that principle.

The ſecond, or the indirect cauſes of death, are thoſe which interrupt ſuch functions as are neceſſary to the circulation of the blood, and thereby neceſſary to the due continuance and ſupport of the vital principle.

101. Of theſe general cauſes, thoſe which operate more particularly in fevers ſeem to be, *firſt*, The *violence of reaction*; which either, by repeated violent excitements, deſtroys the vital power itſelf; or, by its violence, deſtroys the organization of the brain neceſſary to the action of that power; or, by the ſame violence, deſtroys the organization of the parts more immediately neceſſary to the circulation of the blood.

Secondly, The cauſe of death in fevers may be a *poiſon*, that is, a power capable of deſtroying the vital principle; and this poiſon may be either the miaſma or contagion which was the remote cauſe of the fever, or it may be a putrid matter generated in the courſe of the fever. In both caſes, the operation of ſuch a power appears either as acting chiefly on the nervous ſyſtem, inducing the ſymptoms of debility; or as acting upon the fluids of the body, inducing a putreſcent ſtate in them.

102 From all this it appears, that the ſymptoms ſhewing the tendency to death in fevers, may be diſcovered by their being either the ſymptoms

Of *violent reaction ;*

Of *great debility ;*

Or of *a ſtrong tendency to putrefaction in the fluids.*

And upon this ſuppoſition, I proceed now to mark thoſe ſymptoms more particularly *.

103. The ſymptoms which denote the *violence of reaction*, are, 1. The increaſed

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* No part of medical knowledge is ſo ſerviceable in the practice of phyſic as prognoſtics. It wonderfully aſſiſts in the cure of all diſeaſes, but more eſpecially fevers, and other acute diſorders. The young reader, therefore, ought to be particularly attentive to this part of the work. What the author advances is very different from what has gone before. We have here no hypotheſes or fancies—no ſuppoſitions unſupported by facts; but, on the contrary, truths deduced from a careful obſervation of nature, and arranged in a diſtinct and perſpicuous manner.

force, hardneſs, and frequency, of the pulſe. 2. The increaſed heat of the body. 3. The ſymptoms which are the marks of a general inflammatory diatheſis, and more eſpecially of a particular determination to the brain, lungs, or other important viſcera. 4. The ſymptoms which are the marks of the cauſe of violent reaction; that is, of a ſtrong ſtimulus applied, or of a ſtrong ſpaſm formed, the latter appearing in a conſiderable ſuppreſſion of the excretions.

104. The ſymptoms which denote *a great degree of debility*, are,

In the ANIMAL FUNCTIONS: 1. The weakneſs of the voluntary motions; 2. The irregularity of the voluntary motions, depending on their debility; 3. The weakneſs of ſenſation; 4. The weakneſs and irregularity of the intellectual operations.

In the VITAL FUNCTIONS: 1. The weakneſs of the pulſe; 2. The coldneſs or ſhrinking of the extremities; 3. The tendency to a *deliquium animi* in an erect poſture; 4. The weakneſs of reſpiration.

In the NATURAL FUNCTIONS: 1. The weakneſs of the ſtomach, as appearing in anorexia, nauſea, and vomiting; 2. Involuntary excretions, depending upon a palſy of the ſphincters; 3. Difficult deglutition, depending upon a palſy of the muſcles of the fauces.

105. *Laſtly*, The ſymptoms denoting *the putreſcent ſtate of the fluids*, are,

1. With reſpect to the ſtomach; the loathing of animal food, nauſea, and vomiting, great thirſt, and a deſire of acids.

2. With reſpect to the fluids; 1. The blood drawn out of the veins not coagulating as uſual; 2. Hemorrhagy from different parts, without marks of increaſed impetus; 3. Effuſions under the ſkin or cuticle, forming petechiæ, maculæ, and vibices; 4. Effuſions of a yellow ſerum under the cuticle.

3. With reſpect to the ſtate of the excretions; fœtid breath, frequent, looſe, and fœtid ſtools, high-coloured turbid urine, fœtid ſweats, and the fœtor and livid colour of bliſtered places.

4. The cadaverous ſmell of the whole body.

106. Theſe ſeveral ſymptoms have very often, each of them ſingly, a ſhare in determining the prognoſtic: But more eſpecially by their concurrence and combination with one another, particularly thoſe of debility with thoſe of putreſcency *.

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* It may not be amiſs to explain this circumſtance a little more fully. Coldneſs of the extremities may alone be ſufficient to induce the practitioner to think the iſſue of the diſeaſe fatal; yet if this ſymptom be combined with a weakneſs and irregularity of the intellectual operations, and theſe two accompanied with involuntary, looſe, and fœtid evacuations of ſtool, and urine, death may be pronounced to be at no great diſtance.

107. On the ſubject of the prognoſtic, it is proper to obſerve, that many phyſicians have been of opinion there is ſomething in the nature of fevers which generally determines them to be of a certain duration; and therefore that their terminations, whether ſalutary or fatal, happen at certain periods of the diſeaſe rather than at others. Theſe periods are called the CRITICAL DAYS; carefully marked by Hippocrates and other antient phyſicians, as well as by many moderns of the greateſt eminence in practice; while at the ſame time many other moderns, of no inconſiderable authority, deny their taking place in the fevers of theſe northern regions which we inhabit.

108. I am of opinion that the doctrine of the antients, and particularly that of Hippocrates, on this ſubject, was well founded; and that it is applicable to the fevers of our climate.

109. I am of this opinion, *firſt*, Becauſe I obſerve that the animal œconomy, both from its own conſtitution, and from habits which are eaſily produced in it, is readily ſubjected to periodical movements. *Secondly*, Becauſe, in the diſeaſes of the human body, I obſerve periodical movements to take place with great conſtancy and exactneſs; as in the caſe of intermittent fevers, and many other diſeaſes.

110. Theſe conſiderations render it probable, that exact periodical movements may take place in continued fevers; and I think there is evidence of ſuch movements actually taking place.

111. The critical days, or thoſe on which we ſuppoſe the termination of continued fevers eſpecially to happen, are, the *third*, *fifth*, *ſeventh*, *ninth*, *eleventh*, *fourteenth*, *ſeventeenth*, and *twentieth*. We mark none beyond this laſt; becauſe, though fevers are ſometimes protracted beyond this

period, it is, however, more rarely; ſo that there are not a ſufficient number of obſervations to aſcertain the courſe of them; and further, becauſe it is probable that, in fevers long protracted, the movements become leſs exact and regular, and therefore leſs eaſily obſerved.

112. That the days now mentioned are the critical days, ſeems to be proved by the particular facts which are found in the writings of Hippocrates. From theſe facts, as collected from the ſeveral writings of that author by *M. De Haen*, it appears, that of one hundred and ſixty-three inſtances of the termination of fevers, which happened on one or other of the firſt twenty days of the diſeaſe, there are one hundred and ſeven, or more than two thirds of the whole number, which happened on one or other of the eight days above mentioned; that none happened on the ſecond or thirteenth day; and upon the eighth, tenth, twelfth, fifteenth, ſixteenth, eighteenth, and nineteenth,

teenth, there are but eighteen inſtances of termination, or one ninth of the whole.

113. As the terminations which happen on the ſeven days laſt mentioned, are, upon the whole, few; and, upon any one of them, fewer than thoſe which happen on any of our ſuppoſed critical days; ſo there are therefore nine days which may be called NON-CRITICAL; while, on the other hand, the many terminations which happened on the ſeventh, fourteenth, and twentieth days, afford a proof both of critical days in general, and that theſe are the chief of them. Hereafter I ſhall mention an analogy that renders the power of the other critical days ſufficiently probable.

114. It appears further, that as, of the terminations which were final and ſalutary, not a tenth part happened on the non-critical days; and of the terminations which were final and fatal, though the greater

number happened on the critical days, yet above a third of them happened on the non-critical; ſo it would appear, that the tendency of the animal œconomy is to obſerve the critical days, and that it is by the operation of ſome violent and irregular cauſe that the courſe of things is ſometimes turned to the non-critical.

115. What has been ſaid, gives ſufficient ground for preſuming, that it is the general tendency of the animal œconomy to determine the periodical movements in fevers to be chiefly on the critical days. At the ſame time, we muſt acknowledge it to be a general tendency only; and that, in particular caſes, many circumſtances may occur to diſturb the regular courſe of it. Thus, though the chief and more remarkable exacerbations in continued fevers happen on the critical days, there are truly exacerbations happening every day; and theſe, from certain cauſes, may become conſiderable and critical. Further, though

intermittent fevers are certainly very ſtrongly determined to obſerve a tertian or quartan period, we know there are circumſtances which prevent them from obſerving theſe periods exactly, and which render them either anticipating or poſtponing ſo much, that the days of paroxyſms come to be quite changed; and it is allowable to ſuppoſe, that the like may happen with reſpect to the exacerbations of continued fevers, ſo as thereby to diſturb the regular appearance of critical days.

A particular inſtance of this occurs with reſpect to the ſixth day of fevers. In the writings of Hippocrates, there are many inſtances of terminations happening on the ſixth day; but it is not therefore reckoned among the critical days; for, of the terminations happening on that day, there is not one which proves finally of a ſalutary kind; the greater number are fatal; and all the reſt are imperfect, and followed with a relapſe. All this ſhews, that ſome violent cauſe had, in theſe caſes, produced a deviation from the ordinary courſe of nature; that the terminations on the ſixth day are nothing more than anticipations of the ſeventh, and therefore a proof of the power of this laſt *.

116. The doctrine of critical days has been much embarraſſed by ſome diſſonant accounts of it, which appear in the writings imputed to Hippocrates †. But this may

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* This idea of the general tendency of nature to preſerve a regularity in the animal motions, is a moſt ingenious explanation of the apparent irregularities in the termination of fevers. It is perhaps one of the beſt defences of the critical days that ever appeared, becauſe it explains, in a moſt ſatisfactory manner, why the termination on the ſixth day ſhould not be ſalutary. The violence of the diſturbing cauſe excites motions which nature has not the power of withſtanding, and which are either the immediate cauſes of death, or induce ſuch morbid affections as prove ultimately fatal.

† To enter into a critical inquiry, whether the works handed down to us as the writings of Hippocrates are really

may be juſtly accounted for from theſe writings being truly the works of different perſons, and from the moſt genuine of them having ſuffered many corruptions; ſo that, in ſhort, every thing which is inconſiſtent with the facts above laid down, may be aſcribed to one or other of theſe cauſes.

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really the productions of that great man, or compilations from various phyſicians, would be foreign to the deſign of this work. The ſtyle of them is, if I may be allowed the expreſſion, homogeneous; the ſame provincial dialect prevails through the whole of them; and they are extremely remarkable, eſpecially ſuch of them as reſpect the critical days, for being rather a detail of obſerved facts, than reaſonings brought to ſupport a favourite hypotheſis. It is probable, indeed, that Hippocrates, who has got the credit of the work, might have been indebted to many of his contemporaries for ſome of the materials that compoſe them; but the ſameneſs of the ſtyle is a ſtrong preſumptive argument that they are the production of one perſon, or at leaſt of their having been reduced to their preſent form by one and the ſame hand. Dr Cullen's other ſuppoſition, of their having ſuffered many, and, he might have added, material corruptions, ſeems highly probable.

117. This, further, has eſpecially diſturbed the doctrine of critical days, that Hippocrates himſelf attempted, perhaps too haſtily, to eſtabliſh general rules, and to bring the doctrine to a general theory, drawn from Pythagorean opinions concerning the power of numbers. It is this which ſeems to have produced the idea of odd days, and of a quaternary and ſeptenary period; doctrines which appear ſo often in the writings of Hippocrates. Theſe, however, are inconſiſtent with the facts above laid down; and indeed, as Aſclepiades and Celſus have obſerved, are inconſiſtent with one another.

118. Upon the whole, therefore, it is apprehended, that the critical days above aſſigned, are truly the critical days of Hippocrates, and may be conſiſtently explained in the following manner.

119. From the univerſality of tertian or quartan periods in intermittent fevers, we

cannot doubt of there being, in the animal œconomy, a tendency to obſerve ſuch periods; and the critical days above mentioned are conſiſtent with this tendency of the œconomy, as all of them mark either tertian or quartan periods *. Theſe periods, however, are not promiſcuouſly mixed, but occupy conſtantly their ſeveral portions in the progreſs of the diſeaſe; ſo that, from the beginning to the eleventh day, a tertian period takes place; and, from the eleventh to the twentieth, and perhaps longer, a quartan period is as ſteadily obſerved.

120. What determines the periods to be changed about the eleventh day, we have not clearly perceived; but the fact is certain: For there is no inſtance of any termination on the thirteenth that is, the tertian period next following the eleventh; where-

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* The author might have added, "or periods compounded of theſe two."

whereas, upon the fourteenth, ſeventeenth, and twentieth, which mark quartan periods, there are forty-three inſtances of terminations, and ſix only on all the intermediate days between theſe.

This prevalence of a quartan period leaves no room for doubting that the twentieth, and not the twenty-firſt, is the critical day marked by Hippocrates, though the laſt is mentioned as ſuch in the common edition of the aphoriſms, taken from an erroneous manuſcript, which Celſus alſo ſeems to have copied.

121. A conſiſtency with the general tendency of the ſyſtem, renders the ſeries of critical days we have mentioned probably the true one; and the only remaining difficulty in finding what we have delivered to be the ſame with the genuine doctrine of Hippocrates, is the frequent mention of the fourth as a critical day.

It is true there are more inſtances of terminations happening on this day, than on ſome of thoſe days we have aſſerted to be truly critical: But its inconſiſtency with the more general tendency, and ſome other conſiderations, lead us to deny its being naturally a critical day; and to think, that the inſtances of terminations, which have really occurred on the fourth day, are to be reckoned among the other irregularities that happen in this matter.

122. I have thus endeavoured to ſupport the doctrine of critical days, chiefly upon the particular facts to be found in the writings of Hippocrates: And although I might alſo produce many other teſtimonies of both antient and modern times; yet it muſt be owned, that ſome of theſe teſtimonies may be ſuſpected to have ariſen rather from a veneration of Hippocrates, than from accurate obſervation.

123. With reſpect to the opinions of many moderns, who deny the prevalence of critical days, they are to be little regarded:

ed: For the obſervation of the courſe of continued fevers is known to be difficult and fallacious; and therefore the regularity of that courſe may have often eſcaped inattentive and prejudiced obſervers.

124. Our own obſervations amount to this, That fevers with moderate ſymptoms, generally caſes of the ſynocha, frequently terminate in nine days, or ſooner, and very conſtantly upon one or other of the critical days which fall within that period: But it is very rare, in this climate, that caſes of either the typhus or ſynochus terminate before the eleventh day; and, when they do terminate on this day, it is for the moſt part fatally. When they are protracted beyond this time, I have very conſtantly found, that their terminations were upon the fourteenth, ſeventeenth, or twentieth day.

In ſuch caſes, the ſalutary terminations are ſeldom attended with any conſiderable evacuation. A ſweating frequently appears, but is ſeldom conſiderable; and I have hardly ever obſerved critical and deciſive terminations attended with vomiting, evacuations by ſtool, or remarkable changes in the urine. The ſolution of the diſeaſe is chiefly to be diſcerned from ſome return of ſleep and appetite, the ceaſing of delirium, and an abatement of the frequency of the pulſe. By theſe ſymptoms we can often mark a criſis of the diſeaſe: But it ſeldom happens ſuddenly and entirely; and it is moſt commonly from ſome favourable ſymptoms occurring upon one critical day, that we can announce a more entire ſolution upon the next following.

Upon the whole, I am perſuaded, that, if obſervations ſhall be made with attention, and without prejudice, I ſhall be allowed to conclude with the words of the learned and ſagacious Gaubius, "Fallor, ni ſua conſti-
"terit HIPPOCRATI auctoritas, GALENO
"fides, NATURÆ virtus et ordo."

CHAP. VI.

OF THE METHOD OF CURE IN FEVERS.

SECTION I.

Of the CURE *of* CONTINUED FEVERS.

125. AS it is allowed, that, in every fever which has its full courſe, there is an effort of nature of a ſalutary tendency, it might be ſuppoſed that the cure of fevers ſhould be left to the operation of nature, or that our art ſhould be only di-

rected to ſupport and regulate theſe operations, and that we ſhould form our indications accordingly. This plan, however, I cannot adopt, becauſe the operations of nature are very precarious, and not ſo well underſtood as to enable us to regulate them properly. It appears to me, that truſting to theſe operations has often given occaſion to a negligent and inert practice; and there is reaſon to believe, that an attention to the operations of nature may be often ſuperſeded by art.

126. The plan which to me appears to be moſt ſuitable, is that which forms the indications of cure upon the view of obviating the tendency to death; while, at the ſame time, the means of executing theſe indications are directed by a proper attention to the proximate cauſe of fevers.

Upon this plan, in conſequence of what has been laid down above on the ſubject of the prognoſtic, we form three general indications in the cure of continued fevers; and the one or other of theſe is to be employed according as the circumſtances of the fever (102.) ſhall direct.

The firſt, therefore, is, *To moderate the violence of reaction.*

The ſecond is, *To remove the cauſes, or obviate the effects of debility.* And,

The third is, *To obviate or correct the tendency of the fluids to putrefaction.*

127. The firſt indication may be anſwered, that is, the violence of reaction may be moderated,

1. By all thoſe means which diminiſh the action of the heart and arteries.

2. By thoſe means which take off the ſpaſm of the extreme veſſels, which we ſuppoſe to be the chief cauſe of violent reaction.

128. The action of the heart and arteries may be diminiſhed,

1. By avoiding or moderating thoſe irritations, which, in one degree or other, are almoſt conſtantly applied to the body.

2. By the uſe of certain ſedative powers.

3. By diminiſhing the tenſion and tone of the arterial ſyſtem.

129. The irritations (128. 1.) almoſt conſtantly applied, are the impreſſions made upon our ſenſes; the exerciſe of the body and mind; and the taking in of aliments. The avoiding theſe as much as poſſible, or the moderating their force, conſtitute what is rightly called the ANTIPHLOGISTIC REGIMEN, proper to be employed in almoſt every continued fever.

130. The conduct of this regimen is to be directed by the following rules and conſiderations.

1. Impreſſions on the external ſenſes, as being ſtimulant to the ſyſtem, and a chief ſupport of its activity, ſhould be avoided as much as poſſible; thoſe eſpecially of more

conſtant application, thoſe of a ſtronger kind, and thoſe which give pain and uneaſineſs.

No impreſſion is to be more carefully guarded againſt than that of external heat; while, at the ſame time, every other means of increaſing the heat of the body is to be ſhunned. Both theſe precautions are to be obſerved as ſoon as a hot ſtage is fully formed, and to be attended to during its continuance; excepting in certain caſes, where a determination to ſweating is neceſſary, or where the ſtimulant effects of heat may be compenſated by circumſtances which determine it to produce a relaxation and revulſion.

2. All motion of the body is to be avoided, eſpecially that which requires the exerciſe of its own muſcles; and that poſture of the body is to be choſen which employs the feweſt muſcles, and which keeps none of them long in a ſtate of contraction. Speaking, as it accelerates reſpiration, is particularly to be refrained from.

It is to be obſerved, that every motion of the body is the more ſtimulant in proportion as the body is weaker.

3. The exerciſe of the mind is alſo a ſtimulus to the body; ſo that all impreſſions which lead to thought, and thoſe eſpecially which may excite emotion or paſſion, are to be carefully ſhunned.

With reſpect to avoiding impreſſions of all kinds, an exception is to be made in the caſe of a delirium coming on, when the preſenting of accuſtomed objects may have the effect of interrupting and diverting the irregular train of ideas then ariſing in the mind.

4. The preſence of recent aliment in the ſtomach always proves a ſtimulus to the ſyſtem, and ought therefore to be as moderate as poſſible. A total abſtinence for ſome time may be of ſervice; but as this cannot be long continued with ſafety, we muſt avoid the ſtimulus of aliment, by chooſing

that kind which gives the leaſt*. We ſuppoſe that alimentary matters are more ſtimulant according as they are more alkaleſcent; and this leads to avoid all animal, and to uſe vegetable food only.

As our drinks alſo may prove ſtimulant, ſo all aromatic and ſpirituous liquors are to be avoided; and, in anſwering the preſent indication, all fermented liquors, excepting thoſe of the loweſt quality, are to be abſtained from †.

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* In addition to theſe directions, it may be mentioned that, if the patient have a deſire for food, which is ſeldom the caſe, he ought to make very ſparing and frequent meals. Much food taken at once proves a greater ſtimulus than the ſame quantity taken at ſeveral different times; eſpecially if ſufficient quantities of diluting mucilaginous drink, ſuch as lintſeed tea, barley-water, water-gruel, &c. be taken along with it.

† Thin liquors are the beſt in caſes of this kind: Of theſe we may uſe either water alone, or weak lintſeed tea, thin barley-water, toaſt and water, whey, currant jelly diſſolved in water, with a variety of ſuch like mucilaginous aceſcent drinks. They ought to be taken in ſmall quantities, and often.

131. Beſide theſe ſtimulant powers more conſtantly applied, there are others which, although occaſional only, yet, as commonly accompanying fevers, muſt be attended to and removed *.

One is, the ſenſe of thirſt, which, as a powerful ſtimulus, ought always, in one way or other, to be removed †.

Another ſtimulus frequently ariſes from crudities, or corrupted humours, in the ſtomach; and it is to be removed by vomiting, by dilution, or by the uſe of acids ‡.

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* This paſſage might have been more clearly expreſſed thus: Beſides the ſtimulant powers more conſtantly applied, others, only occaſionally accompanying fevers, muſt be attended to and removed.

† The drinks mentioned in the former note are beſt adapted to this purpoſe.

‡ The vegetable acids are the moſt ſuitable, eſpecially the juices of acid fruits, as the juices of oranges, lemons, currants, or apples, diluted with water. In ſome caſes, the mineral acids have been much extolled, eſpecially the nitrous, when united with ſpirit of wine. The ſpiritus ætheris nitroſi of the laſt London Pharmacopoeia is uſed with ſucceſs in theſe caſes. It may be given in barley-water, to the quantity of 20 or 25 drops within the hour.

A third ſtimulus often ariſes from the preternatural retention of fæces in the inteſtines; and ought to be removed by frequent laxative glyſters *.

A fourth ſtimulus to be conſtantly ſuſpected in fevers, is a general acrimony of the fluids, as produced by the increaſe of motion and heat, joined with an interruption of the excretions. This acrimony is to be obviated or removed by the taking in of large quantities of mild antiſeptic liquors †.

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* The preference of glyſters to purging medicines is obvious. The action even of the moſt gentle laxatives is always attended with ſome degree of ſtimulus, while glyſters, eſpecially the mild ones, ſeldom produce that effect. The beſt glyſter, in theſe caſes, is half a pint of milk, with as much water, two ounces of oil, and one ounce of brown ſugar, or, what is better than ſugar, two ounces of manna.

† The chief of theſe are the acid fruits diluted with water; to which we may add the decoction of malt, of radix graminis (the Triticum repens of Linne), infuſions of ſage, mint, and other plants of that natural order which Linne calls Spirantia.

132. The avoiding of irritation in all theſe particulars, (130. and 131.) conſtitutes the antiphlogiſtic regimen abſolutely neceſſary for moderating the violence of reaction; and, if I miſtake not, is proper in almoſt every circumſtance of continued fevers; becauſe the propriety and ſafety of employing ſtimulants is often uncertain; and becauſe ſeveral of thoſe above mentioned, beſide their ſtimulant powers, have other qualities by which they may be hurtful.

It appears to me, that the ſuppoſed utility of ſtimulants, in certain caſes of fever, has often ariſen from a miſtake in having aſcribed to their ſtimulant what really depended upon their antiſpaſmodic power.

133. A ſecond head of the means (128. 2.) for moderating the violence of reaction, comprehends certain ſedative powers, which may be employed to diminiſh the activity of the whole body, and particularly that of the ſanguiferous ſyſtem.

The *firſt* of theſe to be mentioned is the application of cold.

Heat is the chief ſupport of the activity of the animal ſyſtem; which is therefore provided in itſelf with a power of generating heat. But, at the ſame time, we obſerve, that this would go to exceſs, were it not conſtantly moderated by a cooler temperature in the ſurrounding atmoſphere. When, therefore, that power of the ſyſtem generating heat is increaſed, as is commonly the caſe in fevers, it is neceſſary not only to avoid all means of increaſing it further, but it ſeems proper alſo to apply air of a cooler temperature; or at leaſt to apply it more entirely and freely, than in a ſtate of health.

Some late experiments in the ſmall-pox, and in continued fevers, ſhew that the free admiſſion of cool air to the body is a powerful remedy in moderating the violence of reaction; but what is the mode of its operation, to what circumſtances of fever it is peculiarly adapted, or what limitations it requires, I ſhall not venture to determine, till more particularly inſtructed by further experience.

134. A *ſecond* ſedative power which may be employed in fevers, is that of certain medicines, known, in the writings on the Materia Medica, under the title of REFRIGERANTS.

The chief of theſe are acids of all kinds, when ſufficiently diluted; and they are, in ſeveral reſpects, remedies adapted to continued fevers. Thoſe eſpecially in uſe are, the Vitriolic and Vegetable; and, on many accounts, we prefer the latter *.

135.

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* The vitriolic acid is harſh to the taſte, and frequently acts as an aſtringent; it is therefore not always admiſſible. The beſt vegetable acids for this purpoſe, are, as was ſaid above, the natural juices of acid fruits. The acid of tartar is the beſt refrigerant we have; There is an excellent formula of it in the Swediſh Pharmacopoeia, under the title Pulvis Refrigerans, which conſiſts chiefly of the eſſential ſalt of tartar and ſugar. The doſe of

135. Another ſet of refrigerants are, the Neutral Salts, formed of the vitriolic, nitrous or vegetable acids; with alkalines, either fixed or volatile. All theſe neutrals, while they are diſſolving in water, generate cold; but as that cold ceaſes ſoon after the ſolution is finiſhed, and as the ſalts are generally exhibited in a diſſolved ſtate, their refrigerant power in the animal body does not at all depend upon their power of generating cold with water. The neutral chiefly employed as a refrigerant, is Nitre; but all the others, compounded as above mentioned, partake more or leſs of the ſame quality *.

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of the acid of tartar, prepared according to Scheele's preſcription, is half a ſcruple, or fifteen grains, in the hour, largely diluted with a mucilaginous liquor.

* Nitre has been long uſed as a refrigerant. In too large quantities, however, it has often done harm. It may therefore be neceſſary to guard the young practitioner againſt giving nitre in a larger quantity than two drams in the twenty-four hours, nor in doſes of above ten grains, well diluted with mucilaginous drink.

136. Beſide theſe neutrals, ſome metallic ſalts alſo have been employed as refrigerants in fevers; and particularly the Sugar of Lead. But the refrigerant powers of this are not well aſcertained; and its deleterious qualities are too well known to admit of its being freely uſed.

137. Under the *third* general head (128. 3.) of the means to be employed for moderating the violence of reaction, are comprehended the ſeveral means of diminiſhing the tenſion, tone, and activity, of the ſanguiferous ſyſtem. As the activity of this ſyſtem depends, in a great meaſure, upon the tone, and this again upon the tenſion of the veſſels, given to them by the quantity of fluids they contain, it is evident, that the diminution of the quantity of theſe muſt diminiſh the activity of the ſanguiferous ſyſtem.

138. The quantity of fluids contained in the ſanguiferous ſyſtem, may be diminiſhed

ed moſt conveniently by the evacuations of blood-letting and purging.

139. Nothing is more evident than that blood-letting is one of the moſt powerful means of diminiſhing the activity of the whole body, eſpecially of the ſanguiferous ſyſtem; and it muſt therefore be the moſt effectual means of moderating the violence of reaction in fevers. Taking this as a fact, I omit inquiring into its mode of operation, and ſhall only conſider in what circumſtances of fevers it may be moſt properly employed.

140. When the violence of reaction, and its conſtant attendant, a phlogiſtic diatheſis, are ſufficiently manifeſt; when theſe conſtitute the principle part of the diſeaſe, and may be expected to continue throughout the whole of it, as in the caſes of *ſynocha;* then blood-letting is the principal remedy, and may be employed as far as the ſymptoms of the diſeaſe may ſeem to require,

quire, and the conſtitution of the patient will bear. It is, however, to be attended to, that a greater evacuation than is neceſſary, may occaſion a ſlower recovery, may render the perſon more liable to a relapſe, or may bring on other diſeaſes.

141. In the caſe of *ſynocha*, therefore, there is little doubt about the propriety of blood-letting; but there are other ſpecies of fever, as the *ſynochus*, in which a violent reaction and phlogiſtic diatheſis appear, and prevail during ſome part of the courſe of the diſeaſe; while, at the ſame time, theſe circumſtances do not conſtitute the principal part of the diſeaſe, nor are to be expected to continue during the whole courſe of it; and it is well known, that, in many caſes, the ſtate of violent reaction is to be ſucceeded, ſooner or later, by a ſtate of debility, from the exceſs of which the danger of the diſeaſe is chiefly to ariſe. It is therefore neceſſary, that, in many caſes, blood-letting ſhould be avoided; and even

although, during the inflammatory ſtate of the diſeaſe, it may be proper, it will be neceſſary to take care that the evacuation be not ſo large as to increaſe the ſtate of debility which is to follow.

142. From all this it muſt appear that the employing blood-letting, in certain fevers, requires much diſcernment and ſkill, and is to be governed by the conſideration of the following circumſtances:

1. The nature of the prevailing epidemic.
2. The nature of the remote cauſe.
3. The ſeaſon and climate in which the diſeaſe occurs.
4. The degree of phlogiſtic diatheſis preſent *.
5. The period of the diſeaſe.
6. The age, vigour, and plethoric ſtate of the patient.
7. The patient's former diſeaſes and habit of blood-letting.

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* The phlogiſtic diatheſis is explained in Art. 247.

8. The appearance of the blood drawn out.

9. The effects of the blood-letting that may have been already practiſed.

143. When, after the conſideration of theſe circumſtances, blood-letting is determined to be neceſſary, it ſhould be obſerved, that it is more effectual, according as the blood is more ſuddenly drawn off, and as the body is at the ſame time more free from all irritation, and conſequently when in a poſture in which the feweſt muſcles are in action.

144. Another evacuation whereby the quantity of fluids contained in the body can be conſiderably diminiſhed, is that of Purging.

145. If we conſider the quantity of fluids conſtantly preſent in the cavity of the inteſtines, and the quantity which may be drawn from the innumerable excretories

that open into this cavity, it will be obvious, that a very great evacuation can be made by purging; and, if this be done by a ſtimulus applied to the inteſtines, without being at the ſame time communicated to the reſt of the body, it may, by emptying both the cavity of the inteſtines, and the arteries which furniſh the excretions poured into it, induce a conſiderable relaxation in the whole ſyſtem; and therefore purging ſeems to be a remedy ſuited to moderate the violence of reaction in fevers.

146. But it is to be obſerved, that, as the fluid drawn from the excretories opening into the inteſtines, is not all drawn immediately from the arteries, as a part of it is drawn from the mucous follicles only; and as what is even more immediately drawn from the arteries, is drawn off ſlowly; ſo the evacuation will not, in proportion to its quantity, occaſion ſuch a ſudden depletion of the red veſſels as blood-letting does; and therefore cannot operate ſo powerful-

ly in taking off the phlogiſtic diatheſis of the ſyſtem.

147. At the ſame time, as this evacuation may induce a conſiderable degree of debility; ſo, in thoſe caſes in which a dangerous ſtate of debility is likely to occur, purging is to be employed with a great deal of caution; and more eſpecially as the due meaſure of the evacuation is more difficult to be applied than in the caſe of blood-letting.

148. As we ſhall preſently have occaſion to obſerve, that it is of great importance, in the cure of fevers, to reſtore the determination of the blood to the veſſels on the ſurface of the body; ſo purging, as in ſome meaſure taking off that determination, ſeems to be an evacuation not well adapted to the cure of fevers.

149. If, notwithſtanding theſe doubts, (146. 147. and 148.) it ſhall be aſſerted,

that purging, even from the exhibition of purgatives, has often been uſeful in fevers; I would beg leave to maintain, that this has not happened from a large evacuation; and, therefore, not by moderating the violence of reaction, excepting in the caſe of a more purely inflammatory fever, or of exanthemata of an inflammatory nature. In other caſes of fever, I have ſeen a large evacuation by purging, of miſchievous conſequence; and if, upon occaſion, a more moderate evacuation has appeared to be uſeful, it is apprehended to have been only by taking off the irritation of retained fæces, or by evacuating corrupted humours which happened to be preſent in the inteſtines; for both of which purpoſes, frequent laxatives may be properly employed *.

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* Purges ought to be very cautiouſly adminiſtered in fevers; and ſuch only are to be uſed as operate with the leaſt irritation. In fevers, attended with local inflammation, we

150. Another ſet of means (127. 2.) for moderating the violence of reaction in fevers, are thoſe ſuited to take off the ſpaſm of the extreme veſſels, which we believe to be the irritation that chiefly ſupports the reaction.

Though I have put here this indication of taking off the ſpaſm of the extreme veſſels, as ſubordinate to the general indica-

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we may be under no apprehenſion of danger even from the briſker purges, as Glauber's ſalt, given in the quantity of an ounce, or an ounce and a half; or three or four ounces of the infuſum ſennae, with half an ounce of Glauber's ſalt, and a dram or two of tincture of jalap: But in fevers where no topical inflammation appears, the purges, if neceſſary, muſt be of the mildeſt kind, ſuch as manna; caſſia, &c. and they muſt be given in ſmall and often repeated doſes. In moſt fevers the inteſtines may be ſufficiently evacuated by taking half an ounce of manna, and a ſcruple of cream of tartar, every hour till it operates, diluting plentifully at the ſame time with barley-water. The phoſphorated ſoda, lately introduced into practice by the ingenious Dr Pearſon of London, is well calculated for theſe caſes. The doſe of it is an ounce or ten drams in barley-water, or broth.

tion of moderating the violence of reaction; it is however to be obſerved here, that as fever univerſally conſiſts in an increaſed action of the heart, either in frequency or in force, which in either caſe is ſupported by a ſpaſm of the extreme veſſels, ſo the indication for removing this is a very general one, and applicable, in almoſt every circumſtance of fever, or at leaſt with a few exceptions to be taken notice of hereafter.

151. For taking off the ſpaſm of the extreme veſſels, the means to be employed are either internal or external.

152. The internal means (151.) are,

1. Thoſe which determine the force of the circulation to the extreme veſſels on the ſurface of the body, and, by reſtoring the tone and activity of theſe veſſels, overcome the ſpaſm on their extremities.

2. Thoſe medicines which have the power of taking off ſpaſm in any part of the

ſyſtem, and which are known under the title of ANTISPASMODICS.

153. Thoſe remedies which are fit to determine to the ſurface of the body, are,

1. DILUENTS.
2. NEUTRAL SALTS.
3. SUDORIFICS.
4. EMETICS.

154. Water enters, in a large proportion, into the compoſition of all the animal fluids, and a large quantity of it is always diffuſed through the whole of the common maſs. Indeed, in a ſound ſtate, the fluidity of the whole maſs depends upon the quantity of water preſent in it. Water, therefore, is the proper diluent of our maſs of blood; and other fluids are diluent only in proportion to the quantity of water they contain.

155. Water may be ſaid to be the vehicle of the ſeveral matters which ought to be excerned; and in a healthy ſtate the ful-

neſs of the extreme veſſels, and the quantity of excretions, are nearly in proportion to the quantity of water preſent in the body. In fever, however, although the excretions are in ſome meaſure interrupted, they continue in ſuch quantity as to exhale the more fluid parts of the blood; and while a portion of them is at the ſame time neceſſarily retained in the larger veſſels, the ſmaller and the extreme veſſels, both from the deficiency of fluid, and their own contracted ſtate, are leſs filled, and therefore allowed to remain in that condition.

156. To remedy this contracted ſtate, nothing is more neceſſary than a large ſupply of water or watery fluids, taken in by drinking or otherwiſe; for as any ſuperfluous quantity of water is forced off by the ſeveral excretories, ſuch a force applied may be a means of dilating the extreme veſſels, and of overcoming the ſpaſm affecting their extremities.

157. Accordingly the throwing in of a large quantity of watery fluids has been, at all times, a remedy much employed in fevers; and in no inſtance more remarkably, than by the Spaniſh and Italian phyſicians, in the uſe of what they call the *Diæta aquea.*

158. This practice conſiſts in taking away every other kind of aliment and drink, and in giving in divided portions every day, for ſeveral days together, ſix or eight pounds of plain water, generally cold, but ſometimes warm. All this, however, is to be done only after the diſeaſe has continued for ſome time, and, at leaſt, for a week *.

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* Simply as a diluent, water is undoubtedly the beſt drink that can be uſed; but, by adding a ſmall quantity of mucilage to it, two intentions are anſwered at the ſame time, viz. diluting and overcoming the acrimony; hence the propriety of barley-water, water-gruel, lintſeed tea, all made extremely weak; of very ſlight decoctions of malt, or bread cruſts, or even the gelatinous parts

159. A ſecond means (153. 2.) of determining to the ſurface of the body, is by the uſe of neutral ſalts. Theſe, in a certain doſe taken into the ſtomach, produce ſoon after a ſenſe of heat upon the ſurface of the body; and, if the body be covered cloſe and kept warm, a ſweat is readily brought out. The ſame medicines, taken during the cold ſtage of a fever, very often put an end to the cold ſtage, and bring on the hot; and they are alſo remarkable for ſtopping the vomiting which ſo frequently attends the cold

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parts of young animals, as calf's feet, or the more ſolid hartſhorn ſhavings, &c. Theſe animal ſubſtances muſt, however, be uſed in great moderation, and only in thoſe caſes where the patient requires nouriſhment. When this watery regimen is carried to a great length, the patient turns anaſarcous; but this effect may be prevented by ſome of the neutral ſalts, of which the Kali acetatum of the London Pharmacopœia is moſt preferable, on account of its diuretic quality. The doſe of it may be carried as far as half an ounce or ſix drams in the day. The ſame intention may alſo be anſwered by eating water creſſes, radiſhes, if in ſeaſon, or a little of the outer rind of turnips; all of which are diuretics.

cold ſtage of fevers. All this ſhews, that neutral ſalts have a power of determining the blood to the ſurface of the body, and may therefore be of uſe in taking off the ſpaſm which in fevers ſubſiſts there.

160. The neutral moſt commonly employed in fevers, is that formed of an alkali with the native acid of vegetables*: But all the other neutrals have more or leſs of the ſame virtue; and perhaps ſome of them, particularly the ammoniacal ſalts, poſſeſs it in a ſtronger degree †.

161.

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* The following is the uſual doſe of it every three or four hours:

℞. Sal. Abſinth. ℈i.
Succ. Limon. ℥ſs. vel q. ſ. ad ſaturationem;
Adde Aq. Fontanæ ℥iſs.
Syrup. commun. ʒii.
M. f. hauſt.

† The form and doſe of this is the ſame with the foregoing, only uſing the volatile alkali inſtead of the fixed. The aqua ammonia acetata of the London Phar-

161. As cold water taken into the ſtomach often ſhews the ſame diaphoretic effects with the neutral ſalts, it is probable that the effect of the latter depends upon their refrigerant powers mentioned above, (134.). What is the effect of the neutral ſalts, given when they are forming and in a ſtate of efferveſcence? It is probable that this circumſtance may increaſe the refrigerant power of theſe ſalts, and may introduce into the body a quantity of fixed air; but for theſe purpoſes it would ſeem proper to contrive that the whole of the efferveſcence ſhould take place in the ſtomach*.

162.

Pharmacopœia is one of the ammoniacal ſalts, and may be given in doſes of two drams every four hours, diluted with an ounce and a half of water.

* It is certainly extremely uſeful in ſuppreſſing vomitings in fevers. The method of producing the efferveſcence in the ſtomach is as follows: Let the patient take the acid firſt, diluted with a ſufficient quantity of water, and immediately after let him ſwallow the alkali, alſo diluted. The proportion of the alkali to the acid muſt be learned from chemiſtry. If the mild fixed alkali is good, it will ſaturate about twelve times its weight of lemon-juice.

162. A third means (153. 3.) of determining to the ſurface of the body, and taking off the ſpaſm ſubſiſting there, is by the uſe of ſudorific medicines, and of ſweating.

163. The propriety of this remedy has been much diſputed; and ſpecious arguments may be adduced both for and againſt the practice.

In favour of the practice, it may be ſaid,

1. That, in healthy perſons, in every caſe of increaſed action of the heart and arteries, a ſweating takes place, and is ſeemingly the means of preventing the bad effects of ſuch increaſed action.

2. That, in fevers, their moſt uſual ſolution and termination is by ſpontaneous ſweating.

3. That, even when excited by art, it has been found manifeſtly uſeful, at certain periods, and in certain ſpecies of fever.

164. Upon the other hand, it may be urged againſt the practice of ſweating,

1. That as in fevers a ſpontaneous ſweating does not immediately come on, ſo there muſt be in theſe ſome circumſtances different from thoſe in the ſtate of health, and which may therefore render it doubtful whether the ſweating can be ſafely excited by art.

2. That, in many caſes, the practice has been attended with bad conſequences. The means commonly employed have a tendency to produce an inflammatory diatheſis; which, if not taken off by the ſweat following their uſe, muſt be increaſed with much danger. Thus, ſweating employed to prevent the acceſſions of intermitting fevers, has often changed them into a continued form, which is always dangerous.

3. The utility of the practice is further doubtful, becauſe ſweating, when it happens, does not always give a final determination; as muſt be manifeſt in the caſe of intermittents, as well as in many continued fevers, which are ſometimes in the beginning attended with ſweatings that do not

prove final; and, on the contrary, whether ſpontaneous, or excited by art, ſeem often to aggravate the diſeaſe.

165. From theſe conſiderations, it is extremely doubtful if the practice of ſweating can be admitted very generally; but, at the ſame time, it is alſo doubtful, if the failure of the practice, or the miſchiefs ſaid to have ariſen from it, have not been owing to the improper conduct of the practitioner.

With reſpect to this laſt, it is almoſt agreed among phyſicians.

1. That ſweating has been generally hurtful when excited by ſtimulant, heating, and inflammatory medicines.

2. That it has been hurtful when excited by much external heat, and continued with a great increaſe of the heat of the body.

3. That it is always hurtful when it does not ſoon relieve, but rather increaſes, the frequency and hardneſs of the pulſe,

the anxiety and difficulty of breathing, the headach, and delirium.

4. That it is always hurtful if it be urged when the ſweat is not fluid, and when it is partial, and on the ſuperior parts of the body only.

166. In theſe caſes, it is probable, that either an inflammatory diatheſis is produced, which increaſes the ſpaſm on the extreme veſſels: or that, from other cauſes, the ſpaſm is too much fixed to yield eaſily to the increaſed action of the heart and arteries; and, upon either ſuppoſition, it muſt be obvious, that urging the ſweat, as ready to produce a hurtful determination to ſome of the internal parts, may be attended with very great danger.

167. Though the doubts ſtarted (164.) are to be attended to; and although the practices (165.) having been found hurtful, are therefore to be rejected; it ſtill remains true.

1. That ſweating has certainly been often uſeful in preventing the acceſſion of fevers, when the times of this have been certainly foreſeen, and a proper conduct employed.

2. That, even after fevers have in ſome meaſure come on, ſweating, when properly employed, either at the very beginning of the diſeaſe, or during its approach and gradual formation, has often prevented their further progreſs.

3. That, even after pyrexiæ have continued for ſome time, ſweating has been ſucceſsfully employed in curing them, as particularly in the caſe of rheumatiſm.

4. That certain fevers, produced by a very powerful ſedative contagion, have been generally treated, ſo far as we yet know, moſt ſucceſsfully by ſweating.

168. Theſe inſtances (167.) are in favour of ſweating, but give no general rule; and it muſt be left to further experience to determine how far any general rule can be

eſtabliſhed in this matter. In the mean time, if the practice of ſweating is to be attempted, we can venture to lay down the following rules for the conduct of it.

1. That it ſhould be excited without the uſe of ſtimulant inflammatory medicines.

2. That it ſhould be excited with as little external heat, and with as little increaſe of the heat of the body, as poſſible.

3. That, when excited, it ſhould be continued for a due length of time, not leſs than twelve hours, and ſometimes for twenty-four or forty-eight hours; always, however, providing that it proceeds without the circumſtances mentioned (165. 3. 4.)

4. That for ſome part of the time, and as long as the perſon can eaſily bear, it ſhould be carried on without admitting of ſleep *.

5. That it ſhould be rendered univerſal over the whole body; and, therefore, particularly,

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* This direction is not always abſolutely neceſſary.

ticularly, that care be taken to bring the ſweating to the lower extremities.

6. That the practice ſhould be rendered ſafer by moderate purging, excited at the ſame time.

7. That it ſhould not be ſuddenly checked by cold any how applied to the body.

169. When attention is to be given to theſe rules, the ſweating may be excited, 1. By warm bathing, or a fomentation of the lower extremities. 2. By frequent draughts of tepid liquors, chiefly water, rendered more grateful by the addition of a light aromatic*, or more powerful by

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* The light aromatics here mentioned are ſage, mint, balm, &c. For the purpoſe of ſweating, white wines anſwer beſt, eſpecially the thin French wines; as alſo Rheniſh wines, particularly Hock. They muſt be taken warm and plentifully diluted. Wine whey is alſo a very powerful ſudorific, as are alſo wheys made with vinegar, cream of tartar, the juices of acid fruits, or with dulcified ſpirit of nitre.

that of a ſmall quantity of wine. 3. By giving ſome doſes of neutral ſalts*. 4. Moſt effectually, and perhaps moſt ſafely, by a large doſe of an opiate, joined with a portion of neutral ſalts, and of an emetic †.

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* Neutral ſalts may be given in the quantity of two ſcruples or a dram; but the patient muſt nevertheleſs drink large quantities of warm water. The Tartarus tartariſatus is the neutral moſt frequently uſed for producing ſweats; its doſe is generally ℈i. but it may be increaſed to two drams.

† This is the well known Dover's powder, now called in the London Pharmacopœia, Pulvis ipecacuanhæ compoſitus. It conſiſts of 8 parts of neutral ſalt, one of opium, and one of ipecacuanh; ſo that 10 grains of it are an ordinary doſe: But it has been given to the quantity of a ſcruple without any bad conſequences, and that doſe repeated every two or three hours till the effect was produced. In general, however, doſes of 12 or 15 grains are the moſt uſual, and are found by experience to be the beſt. The Dovers powder, when given in larger quantities, often nauſeates, and is rejected by vomit. In the Edinburgh Pharmacopœia, the Dovers powder conſiſts of 9 parts of neutral ſalt, one of opium, and one of ipecacuanh.

In what caſes may cold water, thrown into the ſtomach in large quantities, be employed to excite ſweating? See Celsus, Lib. III. chap. vii.—ix.

170. The fourth means (153. 1.) of determining to the ſurface of the body, and thereby taking off the ſpaſm affecting the extreme veſſels, is by the uſe of emetics.

cacuanh. The doſe of this, therefore, will be nearly the ſame as the doſe of the former; eleven grains of the Edinburgh Dovers powder being equivalent to ten of the London. In adminiſtring this powder it may be neceſſary to obſerve, that the patient ought to refrain from drinking for at leaſt an hour after taking it, becauſe it nauſeates more readily if much diluted in the ſtomach; and if the nauſea be ſo great as to produce vomiting, its effects as a ſudorific are conſiderably diminiſhed. When however, a ſweat is produced, thin diluting drinks may, and ought to be plentifully given; for, in ſuch caſes, it is evident from the effect, that the medicine has paſſed out of the ſtomach, and that no material nauſea can then be produced by it.

171. Emetics, and particularly antimonial emetics, have been employed in the cure of fevers ever ſince the introduction of chemical medicines: But, for a long time, they were employed by chemiſts and chemical practitioners only; and although of late the uſe of them has become very general, their efficacy is ſtill diſputed, and their manner of operating is not commonly explained*.

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* All the antimonial emetics are violent in their effects, and are ſometimes attended with diſagreeable conſequences. Emetic tartar is found from experience to be the ſafeſt of them; but it is not always of the ſame ſtrength, unleſs peculiar attention be paid to the making it. The preſcription for it in the laſt Edinburgh Pharmacopœia is preferable to that in the London. Some chemiſts think that it would be better to uſe boiling water alone, and omit the alkaline ſalt; alleging that the alkali renders the precipitation variable in point of ſtrength: But this opinion is erroneous. The alkali is uſed in order to free the precipitate more completely from any remains of the muriatic acid, making it thereby a milder powder and a more perfect calx.

172. Vomiting is, in many reſpects uſeful in fevers; as it evacuates the contents of the ſtomach; as it emulges the biliary and pancreatic ducts; as it evacuates the contents of the duodenum, and perhaps alſo of a larger portion of the inteſtines; as it agitates the whole of the abdominal viſcera, expedes the circulation in them, and promotes their ſeveral ſecretions; and laſtly, by agitating alſo the viſcera of the thorax, it has like effects there. All theſe ſeveral effects are, in many caſes and circumſtances of fever, procured with advantage; but do not properly fall under our view here, where we are to conſider only the effect of vomiting in determining to the ſurface of the body.

173. This effect we do not impute to the exerciſe of vomiting in agitating the whole frame; but to the particular operation of emetics upon the muſcular fibres of the ſtomach, whereby they excite the action of the extreme arteries on the ſurface

of the body, ſo as thereby effectually to determine the blood into theſe veſſels, remove the atony, and take off the ſpaſm effecting them.

174. That ſuch is the power of emetics, will appear from the ſeveral conſiderations mentioned above (44.); and therefore, that they are remedies well ſuited to the cure of fevers.

175. Emetics, for that purpoſe, are adminiſtered in two different ways: That is, either in ſuch doſes as may excite full and repeated vomitings; or in ſuch doſes as may excite ſickneſs and nauſea only, with little or no vomiting at all.

176. Full vomiting is beſt ſuited to the ſeveral purpoſes mentioned (172.); and is alſo well ſuited to determine to the ſurface of the body, ſo as thereby to obviate the atony and ſpaſm which lay the foundation of fever. Thus vomiting, excited a little

before the expected acceſſion of the paroxyſm of an intermittent, has been found to prevent the paroxyſm altogether. And it has been obſerved alſo, that, when contagion has been applied to a perſon, and firſt diſcovers its operation, a vomit given will prevent the fever, which was otherwiſe to have been expected. See LIND *on Fevers and Infection.*

177. Theſe are advantages to be obtained by exciting vomiting at the firſt approach of fevers, or of the paroxyſms of fevers; and after fevers are formed, vomiting may alſo be employed, to take off, perhaps entirely, the atony and ſpaſm, or at leaſt to moderate theſe, ſo that the fever may proceed more gently and ſafely.

178. It is ſeldom, however, that vomiting is found to produce a final ſolution of fevers; and, after they are once formed, it is commonly neceſſary to repeat the vomiting ſeveral times; but this is attended

with inconvenience, and ſometimes with diſadvantage. The operation of full vomiting commonly ſoon ceaſes, and the exerciſe of vomiting is often a debilitating power; and therefore, when the vomiting does not remove the atony and ſpaſm very entirely, it may give occaſion to their recurring with greater force.

179. For theſe reaſons, after fevers are fully formed, phyſicians have thought proper to employ emetics in nauſeating doſes only. Theſe are capable of exciting the action of the extreme veſſels, and their operation is more permanent. At the ſame time they often ſhow their power by exciting ſome degree of ſweat, and their operation is rendered more ſafe, by their commonly producing ſome evacuation by ſtool.

180. Such are the advantages to be procured by nauſeating doſes of emetics; and it only remains to mention, what are the medicines moſt fit to be employed in that

manner, what are the moſt proper times for exhibiting, and what is the beſt manner of adminiſtering them.

181. The emetics at preſent chiefly in uſe, are, Ipecacuanha and Antimony.

The former may be employed for every purpoſe of emetics, particularly thoſe mentioned (172.). It may likewiſe be employed, either in larger or ſmaller doſes, for determining to the ſurface of the body: But, even in very ſmall doſes, it ſo readily excites vomiting, as to be with difficulty employed for the purpoſe of nauſeating only; and, however employed, there is reaſon to believe, that its effects are leſs permanent, and leſs powerfully communicated from the ſtomach to the reſt of the ſyſtem, than thoſe of Antimony.

182. This, therefore, is generally preferred; and its preparations, ſeemingly various, may all be referred to two heads: The *one* comprehending thoſe in which the reguline part is in a condition

to be acted upon by acids; and therefore, on meeting with acids in the ſtomach, becomes active: And the *other* comprehending thoſe preparations in which the reguline part is already joined with an acid, rendering it active.

183. Of each kind there are great numbers, but not differing eſſentially from one another. It will be enough for us to compare the Calx Antimonii Nitrata of the Edinburgh Diſpenſatory with the Emetic Tartar of the ſame. The former, as I judge, is nearly the ſame with what is called James's Powder *. Which of theſe is beſt ſuited to the cure of fevers, as above explained, ſeems doubtful; but it appears to me, that, although the former may have

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* The Pulvis antimonialis of the London Pharmacopœia is intended as a ſubſtitute for, or imitation of, James's powder. The doſe of it is 7 or 8 grains. It is by no means ſo ſure in its operations as the emetic tartar; yet it has been much extolled by ſeveral eminent modern practitioners.

ſome advantages from its ſlower operation, and may thereby ſeem to be more certainly ſudorific and purgative, yet the uncertainty of its doſe renders it inconvenient, has often given occaſion to the timid to be diſappointed, and to the bold to do miſchief. On the other hand, the doſe of the Emetic Tartar can be exactly aſcertained; and I think it may be exhibited in ſuch a manner as to produce all the advantages of the other.

184. Whichſoever of theſe preparations be employed, I judge the moſt proper time for exhibiting them, to be the time of acceſſions; or a little before, when that can be certainly known. In continued fevers, the exacerbations are not always very obſervable; but there is reaſon to think, that one commonly happens about noon, or ſoon after it, and another in the evening; and that theſe, therefore, are the moſt proper times for exhibiting emetics.

185. With reſpect to the manner of adminiſtration, that of the Calx Nitrata is ſimple, as the whole of what is judged a proper doſe is given at once, and no more can properly be given till the time of the next acceſſion *.

The adminiſtration of the Emetic Tartar is different. It is to be given in ſmall doſes, not ſufficient to excite vomiting; and theſe doſes, after ſhort intervals, are to be repeated for ſeveral times, till ſickneſs, nauſea, and ſome, but not much, vomiting, come on. The difference of this adminiſtration muſt depend upon the doſe, and the length of the intervals at which it is given. If it be intended that the medicine ſhould certainly operate by ſtool, the doſes are made ſmall, and the intervals long. On the contrary, when vomiting is proper, or when much purging ought to be avoided,

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* The doſe is ten or twelve grains. This calx, however, is very uncertain in its operations, ſome times acting with great violence, and ſometimes ſcarcely producing any perceptible effects.

ed, and therefore ſome vomiting muſt be admitted, the doſes are made larger and the intervals ſhorter *.

186. With reſpect to both kinds of preparations, the repetition is to be made at the times of acceſſion, but not very often: For if the firſt exhibitions, duly managed, have little effect, it is ſeldom that the after exhibitions have much; and it ſometimes happens

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* The doſe of the Antimonium tartariſatum ſhould never exceed three grains. The beſt method of giving it is, to diſſolve three grains in ſix ounces of water; and of this mixture give two table ſpoonfuls: if no vomiting enſues within twenty minutes, repeat the doſe, and continue to give a table ſpoonful every ten minutes till the vomiting is excited, which muſt be encouraged by drinking plentifully of chamomile tea, or a thin water gruel. If the Emetic tartar be intended for a ſudorific, two table ſpoonfuls of the following ſolution every two or three hours will perhaps be more proper than ſmall doſes of the other.

℞. Antimonii tartariſati gr. ii.
Aq. Cinnamom. ſimpl. ℥ii.
—. Font. ℥vi.
M. F. julap.

happens that the repeated vomitings, and eſpecially repeated purgings, do harm by weakening the patient.

187. The other ſet of internal medicines, (152. 2.) which I ſuppoſe may be uſeful in taking off the ſpaſm of the extreme veſſels, are thoſe named Antiſpaſmodic. How many of theſe may be properly employed, I am uncertain; and their mode of operation is involved in great obſcurity. It is certain, however, that opium, camphor, muſk, and perhaps ſome others, have been employed in fevers with advantage; but the circumſtances in which they are eſpecially proper and ſafe, I find difficult to aſcertain; and therefore cannot venture here to lay down any general doctrine concerning them.

188. The external means (151.) ſuited to take off the ſpaſm of the extreme veſſels, are BLISTERING and WARM BATHING.

189. What are the effects of Bliſtering, ſo frequently employed in fevers, is not yet agreed upon among phyſicians; and many different opinions have been maintained on this ſubject, drawn not only from reaſoning, but alſo from preſumed experience. I muſt not, however, enter into controverſy; but ſhall deliver my own opinion in a few words.

190. I am perſuaded, that the ſmall quantity of cantharides abſorbed from a bliſtering plaſter, is not ſufficient to change the conſiſtence of the maſs of blood: And therefore that ſuch a quantity can neither do good, by reſolving phlogiſtic lentor, if it exiſts; nor do harm, by increaſing the diſſolution of the blood ariſing from a putrid tendency in it. I therefore neglect entirely the effects of cantharides upon the fluids.

191. The inflammation produced by the application of cantharides to the ſkin, af-

fords a certain proof of their ſtimulant power: But, in many perſons, the effect of that ſtimulus is not conſiderable; in many, it is not communicated to the whole ſyſtem; and, even when the effect does take place in the whole ſyſtem, it ſeems to be taken off, very entirely, by the effuſion and evacuation of ſerum from the bliſtered part. I conclude, therefore, that neither much good is to be expected, nor much harm to be apprehended, from the ſtimulant power of bliſtering, and the certainty of this concluſion is eſtabliſhed, by the great benefit ariſing from the proper practice of bliſtering in inflammatory diſeaſes.

192. Much has been imputed to the evacuation occaſioned by bliſtering; but it is never ſo conſiderable as to affect the whole ſyſtem; and therefore can neither, by ſudden depletion, relax the ſanguiferous veſſels, nor, by any revulſion, effect the general diſtribution of the fluids.

193. The evacuation, however, is ſo conſiderable as to affect the neighbouring veſſels; and the manifeſt utility of bliſtering near the part affected, in inflammatory diſeaſes, leads me to believe, that bliſtering, by deriving to the ſkin, and producing an effuſion there, relaxes the ſpaſm of the deeper ſeated veſſels. I apprehend it to be in this manner that the tumour of a joint, from an effuſion into the cellular texture under the ſkin, takes off the rheumatic pain affecting that joint.

194. Analogous to this, it may be held, that the good effects of bliſtering in continued fevers, ariſe from its relaxing the ſpaſm of the extreme veſſels, by a communication of the bliſtered part with the reſt of the ſkin; and this is illuſtrated by the effect of bliſtering in colic and dyſentery.

195. It appears to me, that bliſtering may be employed at any period of continued fevers; but that it will be of moſt

advantage in the advanced ſtate of ſuch fevers, when, the reaction being weaker, all ambiguity from the ſtimulant power of bliſtering is removed, and when it may beſt concur with other circumſtances tending to a final ſolution of the ſpaſm.

196. From the view of this matter given in 193. and 194. it will appear, that the part of the body to which bliſters ought to be applied, is indifferent, excepting upon the ſuſpicion of topical affection, when the bliſtering ought to be made as near as poſſible to the part affected.

197. Whether SINAPISMS, and other RUBEFACIENTIA, act in a manner analogous to what we have ſuppoſed of bliſtering, may be doubtful; but their effects in rheumatiſm, and other inflammatory diſeaſes, render it probable.

198. The other external means of taking off the ſpaſm of the extreme veſſels, is

Warm Bathing. This was frequently, and in various circumſtances, employed by the ancients; but till very lately has been neglected by modern phyſicians. As the heat of the bath ſtimulates the extreme veſſels, and, with the concurrence of moiſture, alſo relaxes them, it ſeems to be a ſafe ſtimulus, and well ſuited to take off the ſpaſm affecting them.

199. It may be applied to the whole body by immerſion; but this is, in many reſpects, inconvenient; and whether ſome of the inconveniences of immerſion might not be avoided by a vapour-bath, I have not learned from experience. I know, however, from much experience, that moſt of the purpoſes of warm-bathing can be obtained by a fomentation of the legs and feet, if properly adminiſtered, and continued for a due length of time, which ought not to be leſs than an hour.

200. The marks of the good effects of

ſuch a fomentation, are, the patient's bearing it eaſily, its relieving delirium, and inducing ſleep.

201. Having now conſidered the ſeveral means of ſatisfying the firſt general indication in the cure of fevers, I proceed to the ſecond, (126.), which is, *To remove the cauſe, or obviate the effects of debility.*

202. Moſt of the ſedative powers inducing debility, ceaſe to act ſoon after they have been firſt applied; and, therefore, the removing them is not an object of our preſent indication. There is only one which may be ſuppoſed to continue to act for a long time; and that is, the contagion applied: But we know nothing of the nature of contagion that can lead us to any meaſures for removing or correcting it. We know only its effects as a ſedative power inducing debility, or as a ferment inducing a tendency to putrefaction in the fluids. The obviating the latter will be conſidered

under our third general indication, and the former alone is to be conſidered here.

203. The debility induced in fevers by contagion, or other cauſes, appears eſpecially in the weaker energy of the brain; but in what this conſiſts, or how it may be directly reſtored, we do not well know As Nature, however, does, ſeemingly for this purpoſe, excite the action of the heart and arteries, we aſcribe the continuance of debility to the weaker reaction of the ſanguiferous ſyſtem; ſo that the means to be employed for obviating debility, are immediately directed to ſupport and increaſe the action of the heart and arteries; and the remedies uſed are TONICS or STIMULANTS.

204. In contagious diſeaſes, both from the effects which appear, and from diſſections, it is known, that the tone of the heart and arteries is conſiderably diminiſh-

ed; and that tonic remedies, therefore, are properly indicated.

Theſe are to be conſidered as of two kinds; the firſt being the power of cold, the ſecond that of tonic medicines.

205. The power of cold, as a tonic, I have mentioned above (90.); and it is employed, in fevers, in two ways; either as the cold matter is thrown into the ſtomach, or as it is applied to the ſurface of the body.

206. As it has been ſhown above, that the tonic power of cold can be communicated from any one part to every other part of the ſyſtem; ſo it will readily be allowed, that the ſtomach is a part as fit for this communication as any other; and that cold drink, taken into the ſtomach, may therefore prove an uſeful tonic in fevers.

207. This the experience of all ages has

confirmed: But, at the ſame time, it has been frequently obſerved, that, in certain circumſtances, cold drink, taken into the ſtomach, has proved very hurtful; and, therefore, that the uſe of cold drink in fevers requires ſome limitations. What theſe limitations ſhould be, and what are all the circumſtances which may forbid the uſe of cold drink, is difficult to determine; but it ſeems clearly forbidden, in all caſes where a phlogiſtic diatheſis prevails in the ſyſtem, and more eſpecially when there are topical affections of an inflammatory nature.

208. The other method of employing cold as a tonic, is, by applying it to the ſurface of the body. The application of cold air to the ſurface of the body, as a refrigerant power fit to moderate the violence of reaction, I have ſpoken of above (133.); but probably it may alſo be conſidered here as a tonic, and uſeful in caſes of debility.

209. Not only cool air, but cold water alſo may be applied to the ſurface of the body, as a refrigerant, and perhaps as a tonic. The ancients frequently applied it with advantage, to particular parts, as a tonic; but it is a diſcovery of modern times, that in the caſe of putrid fevers, attended with much debility, the body may be waſhed all over with cold water.

210. This was firſt practiſed at Breſlaw in Sileſia, as appears from a diſſertation, under the title of *Epidemia verna quæ Wratiſlaviam, anno* 1737, *afflixit*, to be found in the appendix to the *Acta Nat. Curioſ.* Vol. X. And from other writers we find, that the practice has paſſed into ſome of the neighbouring countries; although in this iſland, ſo far as I know, we have hitherto had no experience of it.

211. The medicines which have been employed in fevers, as tonics, are various. If the Saccharum Saturni has been found

uſeful, it is, probably, as a tonic, rather than as a refrigerant; and the Ens Veneris, or other preparations of iron which have been employed, can act as tonics only. The preparations of copper, from their effects in epilepſy, are preſumed to poſſeſs a tonic power; but, whether their uſe in fevers be founded upon their tonic or their emetic powers, may be uncertain. The uſe of arſenic and of alum, in intermittent fevers, ſeems manifeſtly to depend upon their tonic power. And, upon the whole, there may occur caſes of continued fevers, which may be cured by tonics taken from the foſſile kingdom: But the uſe of theſe has been rare, as well as the effects uncertain; and phyſicians have employed, more commonly, the vegetable tonics.

212. A great variety of theſe has been employed in the cure of intermittent fevers; but how many of them may be employed in continued fevers, or in what circumſtances of theſe fevers, is not well aſcer-

certained; and I ſhall now only conſider the queſtion with reſpect to the moſt celebrated of theſe tonics, the Peruvian Bark*.

213. This

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* When or how the inhabitants of Peru firſt diſcovered the febrifuge powers of this bark is involved in fable and uncertainty. They appear, however, to have long known its virtue, although we have no proofs of their revealing it to the Europeans before the middle of the laſt century. The Spaniards call the tree which produces it *Palo de Calenturas*, or fever tree. Linne calls it *Cinchona officinalis*, in memory of the Counteſs de Cinchon, the Spaniſh viceroy's Lady in Peru, who was the firſt European that had been cured by it. It was firſt brought into Italy by a Jeſuit about the year 1649, and diſtributed through Europe by the fathers of that order; hence the names *Cortex* and *Pulvis Jeſuiticus*, *Pulvis Patrum*. By Cardinal *de Lugo's* influence a cargo of it was procured and brought to Rome ſoon after; whence it received the name of *Pulvis Cardinalis de Lugo*.

As this bark is a medicine of conſiderable importance, it may not be improper to join a ſhort deſcription of the external qualities of the beſt ſort. It is in concave pieces, ſcarcely ever exceeding the fourth part of a cylinder cut longitudinally. It breaks ſhort, and when broken

213. This bark has been commonly conſidered as a ſpecific, or as a remedy of

which

broken evidently appears to be compoſed of three diſtinct and ſeparate coats, viz. one outer thin coat, that is ſomewhat rugged, often covered with moſs of different kinds, and is of a reddiſh brown colour like cinnamon. The middle coat is conſiderably thicker, of a cloſer texture and deeper colour than the firſt, and is leſs brittle but more reſinous than any other part. The third or innermoſt coat is woody and fibrous, and of a brightiſh red, at leaſt conſiderably brighter than either of the others. From this deſcription of the bark, great care muſt be taken in powdering it, not to leave much groſs powder, but to paſs the whole of it through the ſieve, becauſe the moſt reſinous, and conſequently the moſt effectual, part of the bark is the longeſt and moſt difficult to powder.

With reſpect to the two kinds of bark ſo much talked of and noticed a few years ago, it may be proper to obſerve, that they ſeem to be the production of the ſame tree. The Spaniards always ſelected ſuch pieces as thoſe above deſcribed out of the original packages, and rejected the thin, pale, and quilled ſort, which the Engliſh preferred. It is certain that both the red, pale quilled, and a variety of gradation between them, all occur in the ſame cheſt as originally imported; and

it

which the operation was not underſtood. But it is certainly allowable to inquire into this matter; and I apprehend it may be explained.

214. To this purpoſe it is to be remarked, that as, in many caſes, the effects of the bark are perceived ſoon after its being taken into the ſtomach, and before it can poſſibly be conveyed to the maſs of blood, we may conclude, that its effects do not ariſe from its operating on the fluids; and muſt, therefore, depend upon its operating on the nerves of the ſtomach, and being thereby communicated to the reſt of the nervous ſyſtem. This operation ſeems to be a tonic power, the bark being a remedy in many caſes of debility, particularly in gangrene:

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it is extremely improbable, that the bark of different kinds of trees ſhould be packed together. Be this matter however as it may, experience gives the preference to what is called the red bark, and this ſort ought ſurely to be uſed.

gangrene: And, as the recurrence of the paroxyſms of intermittent fevers depends upon a recurrence of atony, (35. and 36.), ſo probably the bark, by its tonic power, prevents the recurrence of theſe paroxyſms; and this is greatly confirmed by obſerving, that many other tonic medicines anſwer the ſame purpoſe.

215. If the operation of the bark may be thus explained, from its poſſeſſing a tonic power, it is eaſy to perceive why it is improper when a phlogiſtic diatheſis prevails; and, from the ſame view, we can aſcertain in what caſes of continued fever it may be admitted. Theſe are either after conſiderable remiſſions have appeared, when it may be employed to prevent the return of exacerbations, on the ſame footing that it is uſed in intermittent fevers: or in the advanced ſtate of fevers, when all ſuſpicion of an inflammatory ſtate is removed, and a general debility prevails in the ſyſtem; and its being then employed

is ſufficiently agreeable to the preſent practice.

216. With reſpect to the uſe of the bark, it is proper to add, that good effects are to be expected from it, almoſt only when given in ſubſtance and in large quantity *.

217. Another ſet of medicines to be employed for obviating debility and its effects, are the direct ſtimulants (203.). Theſe, in ſome meaſure, increaſe the tone of the moving fibres; but they are different from the tonics, as more directly exciting and in-

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* The doſes of the bark can only be determined from the ſtate of the patient's ſtomach and the violence of the diſeaſe: It is uſual to give a dram of the powder at a doſe, and repeat it every two or three hours, according to the exigency of the caſe, or the ſtate of the patient's bowels. It frequently paſſes off by ſtool when given too liberally; this inconvenience is obviated by giving a few drops, 8 or 12, of laudanum with each doſe.

increaſing the action of the heart and arteries. This mode of their operation renders the uſe of them ambiguous; and when an inflammatory diatheſis is preſent, as ſo often happens in the beginning of fevers, the effects of theſe ſtimulants may be very hurtful; but it ſtill remains probable, that, in the advanced ſtate of fevers, when debility prevails, they may be uſeful.

218. What are the ſtimulants that may be moſt properly employed, I am uncertain, as the uſe of them in this age has been rare; but I am diſpoſed to believe that, of all kinds, wine is the beſt.

219. Wine has the advantage of being grateful to the palate and ſtomach, and of having its ſtimulant parts ſo much diluted, that it can be conveniently given in ſmall dozes; ſo that it may be employed with ſufficient caution: But it is of little ſervice unleſs taken pretty largely*.

220. It

* Wine is a valuable cordial, and is much ſuperior to

220. It may be ſuppoſed, and on good grounds, that wine has an operation analogous to that of opium and ſome other narcotic medicines. It may indeed be ſaid, that we can diſtinctly mark its ſtimulant power only, which renders its effects in the phrenitic delirium manifeſtly hurtful, and, in the mild delirium, depending on debility, as remarkably uſeful. But in all this, the analogy with opium is ſtill obvious; and it is probable, that both wine and opium are more uſeful by their ſedative and antiſpaſmodic, than by their ſtimulant powers.

221. Theſe

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to moſt other ſtimulants; it raiſes the pulſe, ſupports the vis vitæ, promotes diaphoreſis, and reſiſts putrifaction.

With reſpect to the medical differences of wines, it may ſuffice to obſerve, that the effects of full bodied wines are more laſting than thoſe of the thinner. Red wines are ſubaſtringent, and conſequently poſſeſs a tonic virtue, and are hence more proper in fevers of all kinds where wine is at all admiſſable, than white wines are. All ſweet wines are nutritive and in general more ſtimulating than others; but they heat much, and are apt to turn ſour on the ſtomach.

221. Theſe are the means of anſwering our ſecond general indication (126. 2.); and I now proceed to the third, which is, *To obviate or to correct the tendency of the fluids to putrefaction.*

222. This may be done,

1. By avoiding any new application of putrid or putreſcent matter.

2. By evacuating the putrid or putreſcent matter already preſent in the body.

3. By correcting the putrid or putreſcent matter remaining in the body.

4. By ſupporting the tone of the veſſels, and thereby reſiſting further putrefaction, or obviating its effects.

223. The further application of putrid or putreſcent matter may be avoided,

1. By removing the patient from places filled with corrupted air.

2. By correcting the air from which he cannot be removed.

3. By preventing the accumulation of the patient's own effluvia, by a conſtant

ventilation, and by a frequent change of bed-clothes and body-linen.

4. By the careful and ſpeedy removal of all excremental matters from the patient's chamber.

5. By avoiding animal food, or correcting it.

224. The putrid or putreſcent matter, already preſent in the body, may be evacuated partly by evacuating frequently the contents of the inteſtines *; and more effectually ſtill, by ſupporting the excretions of

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* The evacuants to be uſed in theſe caſes are, the milder purges, ſuch as manna, &c. Rhubarb and Senna may alſo be uſed ; but we muſt avoid the draſtic purges, ſuch as jalap, ſcammony, aloes, and ſimilar reſinous purges. Calomel has been found very uſeful in theſe caſes : It may be given to the quantity of 8 or 10 grains, and three ounces of the Infuſum ſennæ with half an ounce of Glauber's ſalt may be given, about 10 or 12 hours after it, to accelerate its operation.

of perſpiration and urine, by the plentiful uſe of diluents [*].

225. The putrid or putreſcent matter, remaining in the body, may be rendered more mild and innocent by the uſe of diluents; or may be corrected by the uſe of antiſeptics. Theſe laſt are of many and various kinds; but which of them are conveniently applicable, or more particularly ſuited to the caſe of fevers, is not well aſcertained. Thoſe moſt certainly applicable and uſeful, are, acids [†] of all kinds, acescent

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[*] The diluents neceſſary in theſe caſes muſt all be mixt with a little port wine or claret. Warm Port wine and water is the beſt diluent.

[†] Whether all kinds of acids are to be uſed as antiſeptics is ſomewhat doubtful. The mineral acids, eſpecially the vitriolic, have been much recommended; but the vegetable acids ſeem much more efficacious. As their mildneſs allows us to give them in very large quantities, and as they more eaſily enter into a union with the animal fluids than the foſſile acids do, they ſeem

aceſcents aliments, neutral ſalts *, and fixed air †.

226. The

ſeem more ſuitable antiſeptics in theſe caſes. Whether there is any difference between the native vegetable acids and vinegar, with reſpect to their antiſeptic qualities, was formerly much diſputed by practitioners. Phyſicians, however, have now ſettled this queſtion; and are generally of opinion, that, in caſes of putreſcence ariſing from fevers, the fermented acid is moſt proper; but, in caſes of putreſcence without fever, they prefer the native acid juices.

* The antiſeptic power of the different neutral ſalts is extremely various. According to the reaſoning in the foregoing note, thoſe conſiſting of a vegetable acid baſe ought to be preferred; and indeed experience confirms the opinion. The Spiritus Mindereri would perhaps be uſeful, if it could be prevented from paſſing too haſtily off by ſweat and urine. In doſes of a dram every two hours, it is leſs ſubject to promote ſweat and urine, than when given in the uſual doſe of half an ounce. Lemon juice, ſaturated with volatile alkali, has often been ſucceſsfully uſed in theſe caſes; eſpecially when they are taken either in the act of effervеſcence, or ſeparately, the one immediately after the other.

† The antiſeptic qualities of fixed air are much doubted

226. The progreſs of putrefaction may be conſiderably retarded, and its effects obviated,

doubted by ſeveral eminent phyſicians. The giving it is frequently very difficult, and ſometimes even impoſſible.

The author might have added ſeveral other antiſeptics to the ſhort liſt he has given: What he has mentioned, however, are ſuch as are generally uſed, or approved of by practitioners. Camphor is a conſiderable antiſeptic, but it is of too heating a quality to be given in ſuch quantities as ſeem neceſſary. The common doſe of it is from one to ten grains, and it is beſt exhibited in the form of a bolus; in which form it may alſo be joined with ſome other antiſeptic, as

℞. Camphor. gr. viii.
Spt. Vini gutt. x.
Pulv. Rad. Contrayerv. ℈ii.
Syr. ſimpl. q. ſ.
M. f. bol.

This doſe may be repeated every ſix hours, or oftener, eſpecially if the pulſe be low or weak. In uſing camphor the practitioner ought to remember that this medicine, when given in large quantities, frequently occaſions delirium. Peculiar attention muſt therefore be paid to that ſymptom, and the doſes of camphor regulated with caution.

viated, by ſupporting the tone of the veſſels: And this may be done by tonic remedies; the chief of which are, Cold, and Peruvian Bark, both ſufficiently treated of above, (205. *et ſeq.*)

227. I have now finiſhed the conſideration of the three general indications to be formed in the cure of continued fevers; and have mentioned moſt of the remedies which have been, upon any occaſion, employed in this buſineſs. It was neceſſary, in the firſt place, to conſider theſe indications and remedies ſeparately, and to explain the operation of the latter more generally: But, from what has been now delivered, compared with what was ſaid above, concerning the difference of fevers, and the ſignification of their ſeveral ſymptoms in forming the prognoſtic, I expect it will not be difficult to aſſign the indication, and to ſelect and combine the ſeveral remedies mentioned, ſo as to adapt them to the ſeveral ſpecies and circumſtances of continued fevers.

I think it may be uſeful for my Readers to have the whole of the cure of CONTINUED FEVERS brought under one View, as in the following TABLE.

In the Cure of CONTINUED FEVERS,

The INDICATIONS are,

I. *To moderate the violence of reaction.*

Which may be done, by
- 1. Diminiſhing the action of the heart and arteries, by
  - A. Avoiding or moderating thoſe irritations which are almoſt conſtantly applied to the body; as,
    - a. The impreſſions made upon our ſenſes, particularly,
      - α. Increaſed heat, whether ariſing from
        - αα. External heat, or,

ββ. The accumulation of the heat of the body.

b. The exerciſe of the body,

c. The exerciſe of the mind,

d. The taking in of aliment.

e. Particular irritations ariſing from

α. The ſenſe of thirſt,

β. Crudities, or corrupted humours, in the ſtomach,

γ. The preternatural retention of fæces,

δ. A general acrimony of the fluids.

B. Employing certain ſedative powers; as,

a. Cold,

b. Refrigerants; the chief of which are,

α. Acids of all kinds,

β. Neutral ſalts,

γ. Metallic ſalts.

C. Diminiſhing the tenſion and tone of the arterial ſyſtem, by

a. Blood-letting,

b. Purging.

2. Taking off the ſpaſm of the extreme veſſels, by

A. Internal means; which are,

a. Thoſe remedies which determine to the ſurface, as,

α. Diluents,

β. Neutral ſalts,

γ. Sudorifics,

δ. Emetics.

b. Thoſe remedies named Antiſpaſmodics.

B. External means; as,

a. Bilſtering,

b. Warm bathing.

II. *To remove the cauſes, or obviate the effects, of debility*, by

1. Supporting and increaſing the action of the heart and arteries, by

A. Tonics, as,

a. Cold,

b. Tonic medicines, which are either,

α. Foſſile,

- α. Foſſil, as,
  - αα. Saccharum ſaturni, &c. or,
- β. Vegetable, as,
  - αα. Peruvian bark.

B. Stimulants, as,
- a. Aromatics, &c.
- b. Wine.

III. *To obviate or correct the tendency of the fluids to putrefaction*, by

1. Avoiding the application of putrid or putreſcent matter, by
   - A. Removing the patient from places filled with corrupted air.
   - B. Correcting the air from which he cannot be removed.
   - C. Avoiding the accumulation of the patient's own effluvia, by
     - a. A conſtant ventilation,
     - b. Frequently changing the bed-clothes and body-linen.
   - D. Removing carefully and ſpeedily all excremental matters.

E. Avoiding animal food, or correcting it.

2. Evacuating the putrid or putreſcent matter already preſent in the body, by

A. Evacuating frequently the inteſtines.

B. Supporting the excretions of perſpiration and urine, by

a. Diluents,

b. Neutral ſalts.

3. Correcting the putrid or putreſcent matter remaining in the body, by

A. Diluents,

B. Antiſeptics,

C. Fixed air.

4. Reſiſting farther putrefaction, or obviating its effects, by

Supporting the tone of the veſſels, by

Tonic remedies.

SECT. II.

Of the Cure of INTERMITTENT FEVERS.

228. It ſtill remains to conſider the cure of intermittent fevers; and with reſpect to theſe, we form alſo three general indications.

1. *In the time of intermiſſion, to prevent the recurrence of paroxyſms.*

2. *In the time of paroxyſms, to conduct theſe ſo as to obtain a final ſolution of the diſeaſe.*

3. *To take off certain circumſtances which might prevent the fulfilling of the two firſt indications.*

229. The firſt indication may be anſwered in two ways;

1. By increaſing the action of the heart and arteries ſome time before the period of acceſſion, and ſupporting that increaſed action till the period of the acceſſion be over, ſo as thereby to prevent the recurrence of the atony and ſpaſm of the extreme veſſels which give occaſion to the recurrence of paroxyſms.

2. Without increaſing the action of the heart and arteries, the recurrence of paroxyſms may be prevented, by ſupporting the tone of the veſſels, and thereby preventing atony, and the conſequent ſpaſm.

230. For the purpoſe mentioned in (229. 1.), the action of the heart and arteries may be increaſed,

1. By various ſtimulant remedies, internally given, or externally applied, and that without exciting ſweat.

2. By the ſame remedies, or others ſo managed as to excite ſweating, and to ſupport that ſweating till the period of acceſſion be for ſome time paſt.

3. By nauſeating doſes of emetics, given about an hour before the time of acceſſion, thereby ſupporting and increaſing the tone and action of the extreme veſſels.

231. The tone of the extreme veſſels may be ſupported without increaſing the action of the heart and arteries (229. 2.), by various tonic medicines; as,

1. Aſtringents alone.
2. Bitters alone.
3. Aſtringents and bitters conjoined.
4. Aſtringents and aromatics conjoined.
5. Certain metallic tonics.
6. Opiates.

Laſtly, An impreſſion of horror.

A good deal of exerciſe, and as full a diet as the condition of the patient's appetite and digeſtion may allow of, will be proper during the time of intermiſſion, and may be conſidered as belonging to this head.

232. Of all the tonic remedies mentioned

ed (231.), the moſt celebrated, and perhaps the moſt certainly effectual, is the Peruvian bark, the tonic power of which we have endeavoured to demonſtrate above (214.), and have at the ſame time explained its uſe in continued fevers.

The ſame obſervation as made in (216.) is eſpecially proper in the caſe of intermittents: And further, with reſpect to theſe, the following obſervations or rules are offered here.

1. That the bark may be employed with ſafety at any period of intermittent fevers, providing that, at the ſame time, there be neither a phlogiſtic diatheſis prevailing in the ſyſtem, nor any conſiderable or fixed congeſtion preſent in the abdominal viſcera.

2. The proper time for exhibiting the bark in intermittent fevers, is during the time of intermiſſion; and where intermiſſions are to be expected, it is to be abſtained from in the time of paroxyſms.

3. In remittents, though no entire apy-

rexia occurs, the Bark may be given during the remiſſions; and it ſhould be given, even though the remiſſions be inconſiderable, if, from the known nature of the epidemic, intermiſſions or conſiderable remiſſions are not to be ſoon expected, and that great danger is apprehended from repeated exacerbations.

4. In the caſe of genuine intermittents, while a due quantity of Bark is to be employed, the exhibition of it ought to be brought as near to the time of acceſſion as the condition of the patient's ſtomach will allow.

5. In general, in all caſes of intermittents, it is not ſufficient that the recurrence of paroxyſms be ſtopped for once by the uſe of the bark; a relapſe is commonly to be expected, and ſhould be prevented by the exhibition of the bark, repeated at proper intervals *.

233. Our

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* The quantity of bark to be given in the intermiſſion

233. Our ſecond general indication for conducting the paroxyſms of intermittent fevers,

ſion muſt be as great as the ſtomach can poſſibly bear. It is very common to give two ounces during the intermiſſion, in doſes of half a dram or two ſcruples every hour, eſpecially in quartans. But it has been found more ſucceſsful in its operations, when we begin with ſmall doſes, viz. ℈i. in the commencement of the intermiſſions, and increaſe the doſes to ʒi. towards the end of it. The bark ſometimes ſits better on the ſtomach by adding to it about an eighth or a fourth of its weight of ſome aromatic antiſeptic. Virginian ſnake root anſwers this intention very well. An ounce of red bark and two drams of ſnake root taken during the intermiſſion of a tertian, if the ſtomach can bear it, or if no diarrhœa comes on, generally prevents the next paroxyſm. In caſe of diarrhœa being produced by bark, ten or twelve drops of laudanum are to be given three or four times with each doſe of the bark.

The ſubſtances generally joined with the bark in preſcription, ſeem calculated either to promote its efficacy or reduce it to the intended form, without having regard to the agreeableneſs of the compoſition. This however is a point of great conſequence, as the taſte of fevers, ſo as to obtain a final ſolution of the diſeaſe, may be anſwered.

1. By

the bark, and the large quantity of it neceſſary for the cure, make the patient frequently loath it before its uſe ought to be diſcontinued. When made into an electuary or bolus with ſyrups, it ſticks about the mouth and fauces; whence its taſte remains a long while; but, when made into an electuary with mucilages, it paſſes down freely, ſcarcely leaving any taſte behind it. The taſte of the bark is very effectually concealed by liquorice root in a decoction, or by the extract in an electuary. The extract of logwood alſo conceals the taſte of the bark, and an electuary made with it, and a ſufficient quantity of mucilage, is a very elegant form. Decoction, infuſions, and tinctures of the bark are much leſs efficacious than the ſubſtance.

The extract and the reſin are ſeldom employed in the cure of intermittents, except when other forms will not ſit on the ſtomach. The formula in the laſt London Pharmacopœia is the beſt, being a compound of both the extract and reſin; for the watery extract is ſtrong in bitterneſs, but weak in aſtringency, and the reſin is ſtrong in aſtringency, but weak in bitterneſs, and both qualities are neceſſary for curing intermittents.

About

1. By exhibiting emetics during the time

About ten or twelve grains of the extract are equivalent to half a dram of the powder.

When a paroxyſm has been ſtopped by the bark, it is by no means ſafe to abandon the uſe of this medicine altogether, as a relapſe is always to be apprehended. The doſes are to be gradually diminiſhed, and the intervals between the times of giving them are to be increaſed: After tertians, we may diminiſh the quantity daily one half, till we arrive at two drams; and theſe two drams ought to be continued in doſes of two ſcruples thrice a day for eight days; after which period, two ſcruples ought to be given night and morning for a week longer: After quartans, when the doſe is reduced to two drams a day, it will be prudent to continue giving this quantity daily for a fortnight, and half a dram night and morning for a fortnight longer.

In order the more effectually to prevent a relapſe, great attention muſt be paid to diet and regimen. Patients are generally extremely voracious after the cure of intermittents; and indeed they require conſiderable nutrition to ſupply the waſte occaſioned by the fever. Small quantities of food are to be taken at once and to of the cold ſtage, or at the beginning of the hot.

2. By

be often repeated; and the moſt nutritive, and at the ſame time eaſily digeſtable food, muſt be choſen, as broths with barley and white fleſh meat, roaſt lamb, veal, chickens, new laid eggs, broild freſh fiſh, &c. Acrid, aceſcent, and irritating aliments, and acids are to be carefully avoided. The drink ought to be in moderate quantity, but rich and ſtrong; as mild ale, Port wine and water.

With reſpect to the regimen proper for convaleſcents from intermittents, it may ſuffice to obſerve, that ſleep may be indulged in. Exerciſe without fatigue is of great uſe, either by walking, by riding on horſe back, or in a carriage, according to the ſtrength of the patient. But, above all, cold muſt be carefully avoided; for nothing more effectually produces a relapſe than an imprudent expoſure to cold damp air, or a neglect in keeping the body properly clothed.

The practice of giving purges after the cure of intermittents is highly blameable, and is frequently the cauſe of a relapſe. Should coſtiveneſs be troubleſome, it may be removed by very mild emollient clyſters.

2. By opiates given during the time of the hot ſtage *.

234. The circumſtances which may eſpecially prevent the fulfilling of thoſe two indications, and therefore give occaſion to our third, are, a phlogiſtic diatheſis prevailing in the ſyſtem, and congeſtions fixed in the abdominal viſcera. The firſt muſt be removed by blood-letting and the antiphlogiſtic regimen; the ſecond, by vomiting and purging.

Where theſe meaſures are not immediately effectual, I hold it ſafer to attempt the

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* This practice, of giving vomits in the end of the cold ſtage and an opiate after their operation, is old. It is mentioned by Sydenham, Boerhaave, Van Swieten, and moſt practical writers. It muſt not however be indiſcriminately uſed. It is ſeldom attended with any ſalutary effect, except in vernal intermittents, and in the earlier periods of the diſeaſe; and it is conſtantly attended with diſadvantage when the diſeaſe has been of long continuance.

the cure of the diſeaſe by the means pointed out in general in (229.) rather than by thoſe in article ſecond of the ſame paragraph.

BOOK II.

OF INFLAMMATIONS, OR PHLEGMASIÆ.

CHAP. I.

OF INFLAMMATION IN GENERAL.

SECT. I.

Of the PHENOMENA *of* INFLAMMATION.

235. WHEN any part upon the ſurface of the body is affected with unuſual redneſs, heat, pain, and tumour, we name the diſeaſe an Inflammation

tion or Phlegmaſia. Theſe ſymptoms of inflammation are never conſiderable, without the whole ſyſtem being, at the ſame time, affected with pyrexia.

236. As the external, ſo likewiſe the internal, parts may be affected with inflammation; and we judge them to be ſo, when, together with pyrexia, there is a fixed pain in any internal part, attended with ſome interruption in the exerciſe of its functions.

237. We judge of the preſence of inflammation alſo from the ſtate of the blood drawn out of the veins. When the blood, after cooling and concreting, ſhows a portion of the gluten ſeparated from the reſt of the maſs, and lying on the ſurface of the craſſamentum; as ſuch ſeparation happens in all caſes of more evident phlemaſia; ſo in ambiguous caſes, we, from this appearance, joined with other ſymptoms, infer the preſence of inflammation. At

the ſame time, it muſt be obſerved, that as ſeveral circumſtances in blood-letting may prevent this ſeparation of gluten from taking place in blood otherwiſe diſpoſed to it; ſo, from the abſence of ſuch appearance, we cannot always conclude againſt the preſence of inflammation.

238. I cannot eaſily give any other general hiſtory of the phenomena of inflammation than what is contained in the three preceding paragraphs; and the variations which may take place in its circumſtances will occur to be more properly taken notice of under the ſeveral heads of the particular genera and ſpecies to be hereafter mentioned. I proceed, therefore, to enquire into the proximate cauſe of inflammation in general.

SECT. II.

Of the PROXIMATE CAUSE *of* INFLAMMATION.

239. The phenomena of inflammation (235.) all concur in ſhowing, that there is an increaſed impetus of the blood in the veſſels of the part affected; and as, at the ſame time, the action of the heart is not always evidently increaſed, there is reaſon to preſume, that the increaſed impetus of the blood in the particular part is owing eſpecially to the increaſed action of the veſſels of that part itſelf.

240. The cauſe of this increaſed action in the veſſels of a particular part is, therefore,

fore, what we are to inquire after, and to conſider as the proximate cauſe of inflammation.

In many caſes, we can manifeſtly perceive, that inflammation ariſes from the application of ſtimulant ſubſtances to the part. When the application of ſuch ſtimulants, therefore, is evident, we ſeek for no other cauſe of inflammation; but as, in many caſes, ſuch application is neither evident, nor, with any probability, to be ſuppoſed, we muſt, in ſuch caſes, ſeek for ſome other cauſe of the increaſed impetus of the blood in the veſſels of the part.

241. Many phyſicians have ſuppoſed, that an obſtruction of the extreme veſſels, any how produced, may prove a cauſe of inflammation; and particularly, that this may ariſe from an obſtruction formed by a matter ſtopping up theſe veſſels. But many difficulties attend this doctrine *.

1. The

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* This is the Boerhaavian doctrine which the author here

1. The opinion ſeems chiefly to have ariſen from the appearance of the blood deſcribed in (237.) when the ſeparated gluten was conſidered as a preternatural and morbid matter: But we now know very certainly, that this gluten is conſtantly a conſtituent part of the human blood; and that it is only a peculiar ſeparation of the parts of the blood, that happens in conſequence of inflammation and ſome other circumſtances, which gives occaſion to the appearance that was falſely conſidered as a mark of the morbid lentor in the blood.

2. There are no experiments directly in proof of a preternatural lentor prevailing in the maſs of blood; nor is there any evidence of certain parts of the blood occaſionally

here refutes. Many objections might be made againſt ſeveral parts of this refutation; but to examine it minutely, is foreign to my purpoſe, and would require more room than the narrow limits of theſe notes can poſſibly allow.

caſionally acquiring a greater denſity and force of coheſion than ordinary; neither is there any proof of the denſer, or more coherent parts, being preſent in the maſs of blood in ſuch greater proportion than uſual, as to occaſion a dangerous ſpiſſitude. The experiments of Dr Browne Langriſh on this ſubject afford no concluſion, having been made on certain parts of the blood ſeparated from the reſt, without attending to the circumſtances of blood-letting, which very much alter the ſtate of the ſeparation and concretion of the blood drawn out of the veins.

3. The ſuppoſition of a preternatural lentor or viſcidity of the blood, is not well founded; for it is probable, that nature has ſpecially provided againſt a ſtate of the fluids, ſo incompatible with the exerciſe of the moſt important functions of the animal œconomy. While motion continues to prevent any ſeparation of parts, and heat continues to preſerve the fluidity of the more viſcid, there ſeems to be always ſo large a proportion of water pre-

ſent as to give a ſufficient fluidity to the whole. I muſt own that this is not abſolutely concluſive; but I ſtill repeat it, as giving a probability to the general argument.

4. In the particular caſe of inflammation, there are ſeveral circumſtances which render it probable that the blood is then more fluid than uſual.

5. I preſume that no ſuch general lentor, as Boerhaave and his diſciples have ſuppoſed, does ever take place; becauſe, if it did, it muſt ſhow more conſiderable effects than commonly appear.

6. Beſides the ſuppoſition of an obſtructing lentor, phyſicians have ſuppoſed, that an obſtruction may be formed by an impermeable matter of another kind, and that ſuch an obſtruction may alſo be the cauſe of inflammation. This ſuppoſition is what is well known in the ſchools under the title of an *error loci*; but it is an opinion that I cannot find to be at all probable: For the motion of the blood in the extreme

veſſels is ſo weak and ſlow, as readily to admit a retrograde courſe of it; and therefore, if a particle of blood ſhould happen to enter a veſſel whoſe branches will not allow of its paſſage, it will be moved backwards, till it meet with a veſſel fit for tranſmitting it; and the frequent ramifications and anaſtomoſes of the extreme arteries are very favourable to this. I muſt own indeed, that this argument is not abſolutely concluſive; becauſe I allow it to be pretty certain, that an *error loci* does actually upon occaſion happen: But, for the reaſons I have given, it is probable that it ſeldom happens, and is therefore rarely the cauſe of inflammation; or, if it be, that it is not merely by the obſtruction that it produces; as, among other reaſons, I conclude particularly from the following argument.

7. Though an obſtruction ſhould be ſuppoſed to take place, it will not be ſufficient for producing the effects, and exhibiting the phenomena, that appear in inflammation. The theory that has been

commonly employed on this occaſion is by no means ſatisfying; and, in fact, it appears from many obſervations and experiments, that conſiderable obſtructions may be formed and may ſubſiſt, without producing the ſymptoms of inflammation.

252. Obſtruction, therefore, from a matter ſtopping up the veſſels, *Gaub. Pathol.* 249. i. is not to be conſidered as the primary cauſe of inflammation; but, at the ſame time, it is ſufficiently probable, that ſome degree of obſtruction does take place in every caſe of inflammation. The diſtenſion, pain, redneſs, and tumour, attending inflammation, are to be explained only by ſuppoſing, that the extremities of the arteries do not readily tranſmit the unuſual quantity of blood impelled into them by the increaſed action in the courſe of theſe veſſels. Such an obſtruction may be ſuppoſed to happen in every caſe of an increaſed impetus of the blood; but it is probable, that, in the caſe of inflammation, there

is alſo a preternatural reſiſtance to the free paſſage of the fluids.

243. From the doctrine of fever, we are led to believe, that an increaſed action of the heart and arteries is not ſupported for any length of time by any other means than a ſpaſm affecting the extreme veſſels; and that the ſame ſpaſm takes place in inflammation, ſeems likely, becauſe that every conſiderable inflammation is introduced by a cold ſtage, and is accompanied with that and other circumſtances of pyrexia. It ſeems alſo probable, that ſomething analogous to this occurs even in the caſe of thoſe inflammations which appear leſs conſiderable, and to be purely topical.

244. From all this, the nature of inflammation may in many caſes be explained in the following manner. Some cauſes of inequality in the diſtribution of the blood may throw an unuſual quantity of it upon particular veſſels, to which it muſt neceſſa-

rily prove a ſtimulus. But, further, it is probable, that, to relieve the congeſtion, the *vis medicatrix naturæ* increaſes ſtill more the action of theſe veſſels; and which, as in all other febrile diſeaſes, it effects by the formation of a ſpaſm on their extremities.

245. A ſpaſm of the extreme arteries, ſupporting an increaſed action in the courſe of them, may therefore be conſidered as the proximate cauſe of inflammation; at leaſt, in all caſes not ariſing from direct ſtimuli applied; and even in this caſe the ſtimuli may be ſuppoſed to produce a ſpaſm of the extreme veſſels.

246. That, in inflammation, there is the concurrence of a conſtriction of the extreme veſſels, with an increaſed action in the other parts of them, ſeems probable, from the conſideration of Rheumatiſm. This is a ſpecies of inflammation which is often manifeſtly, produced either by cold applied to over-diſtended veſſels, or by cau-

ſes of an increaſed impetus, and over-diſtenſion in veſſels previouſly conſtricted. Hence the diſeaſe eſpecially appears at ſeaſons liable to frequent and conſiderable viciſſitudes of heat and cold.

To this we may add, that the parts of the body moſt frequently affected with inflammation, are thoſe expoſed, both to over-diſtenſion, from a change in the diſtribution of the fluids, and, at the ſame time, to the immediate action of cold. Hence, quinſies, and pneumonic inflammations, are more frequent than any others.

247. That a ſpaſm of the extreme veſſels takes place in inflammation, is to be further preſumed from what is at the ſame time the ſtate of the whole arterial ſyſtem. In every conſiderable inflammation, though ariſing in one part only, an affection is communicated to the whole ſyſtem, in conſequence of which an inflammation is readily produced in other parts beſides that firſt affected. This general affection is

well known among phyſicians, under the name of the DIATHESIS PHLOGISTICA. It appears moſt commonly in perſons of the moſt rigid fibres; is often manifeſtly induced by the tonic or aſtringent powers of cold; is increaſed by all tonic and ſtimulant powers applied to the body; is always attended with a hardneſs of the pulſe; and is moſt effectually taken off by the relaxing power of blood-letting. From theſe circumſtances, it ſeems probable, that the diatheſis phlogiſtica conſiſts in an increaſed tone, or contractility, and perhaps in an increaſed contraction of the muſcular fibres of the whole arterial ſyſtem. Such a ſtate of the ſyſtem ſeems often to ariſe, and ſubſiſt for ſome time, without the apparent inflammation of any particular part; but ſuch a ſtate of the ſyſtem renders it likely, that a ſpaſm may, at the ſame time, readily ariſe in any of the extreme veſſels, and a particular inflammation be there produced. It does, however, appear alſo, that the general diatheſis frequently ariſes from inflammation begun in a particular part.

248. I have thus endeavoured, in the caſe of inflammation, to explain the ſtate of the whole ſyſtem, as well as that of the part more particularly affected. The latter I have conſidered as when in its firſt formation; but after it has ſubſiſted for ſome time, various changes take place in the part affected; and of theſe I muſt now take notice.

SECT. III.

OF THE TERMINATIONS OF INFLAMMATION.

249. If an inflammation be cured while the ſtate and texture of the part remain entire the diſeaſe is ſaid to be terminated by RESOLUTION.

This happens when the previous congeſtion and ſpaſm have been in a moderate degree, and the increaſed impetus of the blood has been ſufficient to overcome the ſpaſm, to dilate the veſſels, and to remove the congeſtion, ſo that the part is reſtored to its ordinary and healthy ſtate.

A reſolution takes place alſo when the increaſed impetus of the fluids has produced an increaſed exhalation into the adjoining cellular texture, or an increaſed excretion in ſome neighbouring part, and has thereby relaxed the ſpaſm, and relieved the congeſtion, in the veſſels of the part more particularly affected.

Laſtly, A reſolution may take place, when the increaſed impetus of the blood in the whole ſyſtem occaſions an evacuation, which, though in a diſtant part, may prove ſufficient to take off the phlogiſtic diatheſis of the whole ſyſtem, and thereby relieve the congeſtion and ſpaſm of the particular part affected by inflammation.

250. The tumour which appears in inflammation may be imputed in part to the congeſtion of fluids in their proper veſſels;

but is owing chiefly to an effuſion of matter into the adjoining cellular texture; and, accordingly, tumours ſeldom appear but in parts adjoining to a lax cellular texture. If, in this caſe, the matter effuſed be only a larger quantity of the ordinary exhaling fluid, this, when the free circulation in the veſſels is reſtored, will be readily abſorbed, and the ſtate of the part will become the ſame as before. But, if the increaſed impetus of the blood in an inflamed part, dilate the exhalent veſſels to ſuch a degree, that they pour out an entire ſerum, this will not be ſo readily re-abſorbed: And, from the experiments of Sir John Pringle, and eſpecially from thoſe of Mr Gaber, *Miſcell. Taurin.* Vol. II. we learn, that the ſerum, under ſtagnation, may ſuffer a particular change, by having the gluten preſent in it changed into a white opaque, moderately viſcid, mild liquor, which we name PUS. When this change takes place in the inflamed part, as it is at the ſame time attended with an abatement of the redneſs, heat, and pain, which before diſtinguiſhed the inflammation, ſo the diſeaſe is ſaid to be terminated by SUPPURATION; and an inflamed part, containing a collection of pus, is called an ABSCESS.

251. In inflammation, the tendency of it to ſuppuration may be diſcovered, by the long continuance of the inflammation, without the ſymptoms of reſolution; by ſome remiſſion of the pain of diſtenſion; by the pain becoming of a throbbing kind, more diſtinctly connected with the pulſation of the arteries; by the pulſe of the arteries being fuller and ſofter; and often by the patient's being frequently affected with cold ſhiverings. The period at which this takes place is not determined, but may be ſometimes ſooner, ſometimes later. When the tendency is determined, the time neceſſary to a complete ſuppuration is different in different caſes.

When pus is completely formed, the

pain in the part entirely ceaſes, and a weight is felt in it. If the collection be formed immediately under the ſkin, the tumour becomes pointed, the part becomes ſoft, and the fluctuation of the fluid within can commonly be perceived; while, at the ſame time, for the moſt part, the redneſs of the ſkin formerly prevailing is very much gone.

252. In abſceſſes, while the pus is formed of one part of the matter which had been effuſed, the other and thinner parts are re-abſorbed, ſo that, in the abſceſs, when opened, a pus alone appears. This pus, however, is not the converted gluten alone: For the converſion of this being the effect of a particular fermentation, which may affect the ſolid ſubſtance of the part, and perhaps every ſolid of animal bodies; ſo it moſt readily, and particularly, affects the cellular texture, eroding much of it, which thereby becomes a part of the pus. It generally happens alſo, that ſome

of the ſmaller red veſſels are eroded, and thereby ſome red blood often appears mixed with the pus in abſceſſes. Upon the whole, the internal ſurface of an abſceſs is to be conſidered as an ulcerated part.

253. This account of ſuppuration explains, why an abſceſs, when formed, may either ſpread into the cellular texture of the neighbouring parts; or, by eroding the incumbent teguments, be poured out upon the ſurface of the body, and produce an open ulcer.

254. We have here given the idea of an abſceſs as a collection of matter following inflammation; but the term has been applied to every collection of matter effuſed, and changed by ſtagnation in an incloſed cavity.

The matter of abſceſſes, and of the ulcers following them, is various, according to the nature of what is effuſed, and which may be,

1. A matter thinner than ſerum.

2. An entire and pure ſerum.

3. A quantity of red globules.

4 A matter furniſhed by particular glands ſeated in the part.

5. A mixture of matters from different ſources, changed by peculiar fermentation.

It is the ſecond only which affords a proper pus; the effuſion whereof, whether in ſuppurating parts or ulcers, ſeems to be the peculiar effect of an inflammatory ſtate of the veſſels; and for this reaſon it is, that, when ulcers do not produce a proper pus, a circumſtance always abſolutely neceſſary to their healing, we, in many caſes, bring the ulcers to a ſtate of proper ſuppuration, by the application of ſtimulants exciting inflammation, ſuch as balſams, mercury, copper, &c.

255. When the matter effuſed into the cellular texture of an inflamed part, is tain-

ted with a putrid ferment, this produces, in the effuſed matter, a ſtate approaching more or leſs to that of putrefaction. When this is in a moderate degree, and affects only the fluids effuſed, with the ſubſtance of the cellular texture, the part is ſaid to be affected with GANGRENE; but if the putrefaction affect alſo the veſſels and muſcles of the part, the diſeaſe is ſaid to be a SPHACELUS.

256. A gangrene, and its conſequences, may ariſe from a putrid ferment diffuſed in the maſs of blood, and poured out with the ſerum effuſed, which it operates upon more powerfully while the ſerum is ſtagnant, and retained in the heat of the body: But it may alſo ariſe from the peculiar nature of the matter effuſed being diſpoſed to putrefaction; as particularly ſeems to be the caſe of the red globules of the blood effuſed in a large quantity. In a third manner alſo, a gangrene ſeems frequently to ariſe from the violent excitement of the inflam-

mation deſtroying the tone of the veſſels; whereby the whole fluids ſtagnate, and run into putrefaction, which taking place in any degree, deſtroys ſtill further the tone of the veſſels, and ſpreads the gangrene.

257. In inflammation, the tendency to gangrene may be apprehended from an extreme violence of pain and heat in the inflamed part, and from a great degree of pyrexia attending the inflammation.

The actual coming on of gangrene may be perceived, by the colour of the inflamed part changing from a clear to a dark red; by bliſters ariſing upon the part; by the part becoming ſoft, flaccid, and inſenſible; and by the ceaſing of all pain while theſe appearances take place.

As the gangrene proceeds, the colour of the part becomes livid, and, by degrees, quite black; the heat of the part entirely ceaſes; the ſoftneſs and flaccidity of the part increaſe; it loſes its conſiſtence, exhales a cadaverous ſmell, and may then be conſidered as affected with ſphacelus.

258. Gangrene is thus a *third* manner in which inflammation terminates: And the ſchools have commonly marked a *fourth* termination of inflammation; which is, by a ſcirrhus, or an indolent hardneſs of the part formerly affected with inflammation. This, however, is a rare occurrence, and does not ſeem to depend ſo much upon the nature of inflammation, as upon the circumſtances of the part affected. It is in glandular parts chiefly that ſcirrhoſity is obſerved; and it is probably owing to the parts readily admitting a ſtagnation of the fluids. I have obſerved, that inflammation ſeldom induces ſcirrhus; but that this more commonly ariſes from other cauſes; and when inflammation ſupervenes, which it is ſooner or later apt to do, it does not ſo commonly increaſe as change the ſcirrhoſity into ſome kind of

abſceſs. From theſe conſiderations, it does not ſeem neceſſary to take any further notice of ſcirrhus as a termination of inflammation.

259. There are, however, ſome other terminations of inflammation not commonly taken notice of, but now to be mentioned.

One is, by the effuſion of a portion of the entire maſs of blood, either by means of rupture or of anaſtomoſis, into the adjoining cellular texture. This happens eſpecially in inflammations of the lungs, where the effuſed matter, by compreſſing the veſſels, and ſtopping the circulation, occaſions a fatal ſuffocation; and this is perhaps the manner in which pneumonic inflammation moſt commonly proves fatal.

260. Another kind of termination, is that of certain inflammations on the ſurface of the body, when there is poured out

under the cuticle a fluid, which being too groſs to paſs through its pores, therefore ſeparates it from the ſkin, and raiſes it up into the form of a veſicle containing the effuſed fluid; and by which effuſion the previous inflammation is taken off.

261. Beſides theſe already mentioned, I believe there is ſtill another manner in which inflammation terminates. When the internal parts are affected with inflammation, there ſeems to have been almoſt always upon their ſurface an exudation, which appears partly as a viſcid concretion upon their ſurface, and partly as a thin ſerous fluid effuſed into the cavities in which the inflamed viſcera are placed. Though we have become acquainted with theſe appearances only, as very conſtantly accompanying thoſe inflammations which have proved fatal; it is however probable, that like circumſtances may have attended thoſe which were terminated by reſolution, and may have contributed to that event. It is

in favour of this ſuppoſition that there are inſtances of pneumonic inflammation terminating in a hydrothorax.

SECT.

SECT. IV.

OF THE REMOTE CAUSES OF INFLAMMATION.

262. The remote cauſes of inflammation may be reduced to five heads.

1. The application of ſtimulant ſubſtances; among which are to be reckoned the action of fire, or burning.

2. External violence operating mechanically in wounding, bruiſing, compreſſing, or overſtretching the parts.

3. Extraneous ſubſtances lodged in any part of the body, irritating by their chemical acrimony or mechanical form, or compreſſing by their bulk or gravity.

4. Cold, in a certain degree, not ſufficient immediately to produce gangrene.

5. An increaſed impetus of the blood determined to a particular part.

It will not be difficult to underſtand how theſe remote cauſes, ſingly, or in concurrence, produce the proximate cauſe of inflammation.

263. It does not appear that, in different caſes of inflammation, there is any difference in the ſtate of the proximate cauſe, except in the degree of it; and, though ſome difference of inflammation may ariſe from the difference of the remote cauſes, yet this is not neceſſary to be taken notice of here; becauſe the different appearances which attend different inflammations may be referred, for the moſt part, to the differ-

ence of the part affected, as will appear when we ſhall conſider the ſeveral genera and ſpecies marked in the Noſology. When I come to treat of theſe, I ſhall find a more proper occaſion for taking notice of the different ſtates of the proximate, or of the differences of the remote cauſe, than by treating of them in general here.

SECT. V.

OF THE CURE OF INFLAMMATION.

264. The indications of cure in inflammation are different, according as it may ſtill be capable of reſolution, or may have taken a tendency to the ſeveral other terminations above-mentioned. As the tendency to theſe terminations is not always immediately evident, it is always proper, upon the firſt appearance of inflammation,

to attempt the cure of it by reſolution. For this purpoſe, the indications of cure are,

1. To remove the remote cauſes, when they are evident, and continue to operate.

2. To take off the phlogiſtic diatheſis affecting either the whole ſyſtem, or the particular part.

3. To take off the ſpaſm of the particular part, by remedies applied either to the whole ſyſtem, or to the part itſelf.

265. The means of removing the remote cauſes will readily occur, from conſidering the particular nature and circumſtances of the different kinds. Acrid matters muſt be removed, or their action muſt be prevented, by the application of correctors or demulcents *. Compreſſing and over-

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* If the matter cauſing the inflammation be an acid, then

overſtretching powers muſt be taken away; and, from their ſeveral circumſtances, the means of doing ſo will be obvious.

266. The means of taking off the phlogiſtic diatheſis of the ſyſtem, are the ſame with thoſe for moderating the violence of reaction in fever, which are mentioned and treated of from (127. to 149.), and therefore need not be repeated here. I only obſerve, that, in the uſe of thoſe remedies, there is leſs occaſion for any reſerve than in many caſes of fever; and, more particularly,

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then the application of an alkaline ſubſtance will be proper: If, on the contrary, the inflammation be produced by an alkali, then an acid muſt be applied.

In many caſes, however, the acrid ſubſtances cauſing inflammation are neither alkaline nor acid; and, in ſuch caſes, or when we cannot find a proper corrector, we muſt uſe demulcents, which, by their obtunding quality, ſheath the acrimony, or defend the parts to which they are applied from being irritated or corroded.

particularly, that topical bleedings * are here particularly indicated and proper.

267. The means of taking off the ſpaſm of the particular part are nearly the ſame as thoſe mentioned above, for taking off the ſpaſm of the extreme veſſels in the caſe of fever, and which are treated of from (150. to 200.). Only it is obſerved here, that ſome of them are here eſpecially indicated, and that ſome of them are to be directed more particularly to the part eſpecially affected; the management of which will

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* The advantages of topical bleedings, in moſt caſes of local inflammation, are very great. They may be performed by cupping, or, what is in many caſes more preferable, by leeches. Cupping acts ſometimes as a ſtimulus, eſpecially on parts that are tendinous or fleſhy, or where the cellular ſubſtance is thin, and thus frequently increaſes the inflammation which we would wiſh to reſolve.

will be more properly conſidered when we ſhall treat of particular inflammations *.

268.

Solutions of lead in vinegar are the applications which the beſt modern practitioners generally approve. Goulard's Extract was ſuppoſed by the vulgar to be a *new* remedy; and his panegyric on it tended, in a conſiderable degree, to render the uſe of lead more univerſal than it had been before his time. There are, however, many weighty objections againſt the formula uſed by that gentleman; the chief one is, that, on account of the different ſtrength of the vinegar employed, and of the degree of heat uſed in the proceſs, we can never accurately aſcertain the quantity of lead diſſolved in the acid; and conſequently the efficacy of this preparation muſt be uncertain. The Saccharum Saturni, which is always of the ſame ſtrength, is therefore preferable to Goulard's Extract; and as vinegar is a powerful diſcutient itſelf, it has been uſual to add a quantity of vinegar to the ſolution of the ſugar of lead

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* The reſolution of an inflamed part is conſiderably aſſiſted by the application of diſcutients; and, in moſt caſes, when the general ſyſtem is not affected, theſe diſcutients alone frequently ſucceed in diſſolving an incipient phlegmon.

268 When a tendency to ſuppuration (251.) is diſtinctly perceived, as we ſuppoſe

lead in diſtilled water. The following proportions have been found in general to be the beſt :

℞. Sacchar. Saturn. ℥i.
Acet. gallic. opt. ℥iv.
Aq. font. diſtillatae ℥xxxii.
M.

In the application of this ſolution, it is of great conſequence that the parts affected ſhould be continually moiſtened with it. Poultices made of freſh bread crumb, and as much of the above ſolution as is neceſſary, are in general preferable to any other mode of applying it ; but it ſometimes happens that the inflamed part is ſo extremely painful and tender, as not to bear the great weight of a poultice ; and in ſuch caſes we muſt have recourſe to pieces of ſoft linen, moiſtened with the ſolution. Both theſe applications, viz. poultices, or wet pledgets, muſt always be applied cold, and be frequently renewed when they become warm, hard, or ſtiff.

This is the moſt approved method of applying lead for the purpoſe of reſolving inflammations ; yet it frequently poſe it to depend upon the effuſion of a fluid which cannot be eaſily reabſorbed, ſo it becomes neceſſary that this fluid be converted into pus, as the only natural means of obtaining its evacuation : And, as the effuſion is, perhaps, ſeldom made without ſome rupture of the veſſels, to the healing of which a pus is abſolutely neceſſary ; ſo, in

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quently happens that practitioners meet with patients whoſe prepoſſeſſions for a popular remedy are ſo great, that there is no perſuading them from uſing it. The method of making Goulard's Extract and Vegeto-Mineral Water are therefore ſubjoined :

Take Litharge of Gold one pound,
French White-wine Vinegar a quart,

Boil them in an earthen veſſel, on a ſlow fire, for an hour and an half, conſtantly ſtirring them with a wooden ſpathula, and, when cold, pour off the clear liquor, which muſt be kept in well ſtopped glaſs phials.

The Vegeto-Mineral Water is made by adding a hundred drops of the above Extract to a quart of water, and four tea-ſpoonfuls of French brandy.

in the caſe of a tendency to ſuppuration, the indication of cure always is, to promote the production of a perfect pus as quickly as poſſible.

269. For this purpoſe, various remedies, ſuppoſed to poſſeſs a ſpecific power, have been propoſed; but I can perceive no ſuch power in any of them; and, in my opinion, all that can be done is, to favour the ſuppuration by ſuch applications as may ſupport a proper heat in the part, as, by ſome tenacity, may confine the perſpiration of the part, and as, by an emollient quality, may weaken the coheſion of the teguments, and favour their eroſion *.

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* Poultices of various kinds have been recommended for this purpoſe. It is, however, of little conſequence what their ingredients are, provided they be emollient, and applied warm. The white bread poultice is in common uſe, and anſwers in general very well; the addition of a little oil keeps it from beco-

270. As, in the caſe of certain effuſions, a ſuppuration is not only unavoidable, but deſirable,

ming hard, and is at the ſame time ſerviceable as an emollient. A poultice of bruiſed lintſee well boiled with milk and water is ſtrongly recommended by ſome writers, and indeed not without reaſon, on account of its very great emollient quality.

As heat is abſolutely neceſſary for the production of matter in tumors, it is of great conſequence that the poultices ſhould not be ſuffered to cool on the part, and that they ſhould be often renewed. Mr Bell has given excellent directions for applying poultices, with the intention of promoting ſuppuration.

‘ Warm fomentations and poultices,’ ſays that rational practitioner, ‘ are the means uſually employed ‘ for the application of heat to an inflamed part; and, ‘ when theſe are regularly and frequently renewed, nothing, it is probable, can more effectually anſwer the ‘ purpoſe. But, in the ordinary manner in which they ‘ are applied, and as the cataplaſms are renewed only ‘ once, or, at moſt, twice a-day, they muſt always, it is ‘ imagined, do more harm than good. For, as ſoon as the ‘ degree of heat, they at firſt poſſeſſed, is diſſipated, the ‘ moiſture kept up by them, with the conſequent eva-

‘ poration

deſirable, it may be ſuppoſed, that moſt of the means of reſolution formerly mentioned ſhould be avoided; and accordingly our practice is commonly ſo directed. But, as we obſerve, on the one hand, that a certain

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'poration that enſues, muſt always render the part 'much colder than if it had been merely wrapped up 'in flannel, without the uſe of any ſuch application.

'In order to receive all the advantage of ſuch remedies, the part affected ſhould be well fomented with 'flannels, preſſed out of any warm emollient decoction, applied as warm as the patient can eaſily bear 'them, continued at leaſt half an hour at once, and repeated four or five times a-day.

'Immediately after the fomentation is over, a large 'emollient poultice ſhould likewiſe be applied warm, 'and renewed every ſecond or third hour at fartheſt. 'Of all the forms recommended for emollient cataplaſms, a common bread and milk poultice, with a 'due proportion of butter or oil, is perhaps the moſt 'eligible; as it not only poſſeſſes all the advantages of 'the others, but can at all times be more eaſily procured.'—*Treatiſe on Ulcers*, Edition of 1787, p. 67.

tain degree of increaſed impetus, or of the original circumſtances of inflammation, is requiſite to produce a proper ſuppuration; ſo it is then eſpecially neceſſary to avoid thoſe means of reſolution that may diminiſh too much the force of the circulation. And as, on the other hand, the impetus of the blood, when violent, is found to prevent the proper ſuppuration; ſo, in ſuch caſes, although a tendency to ſuppuration may have begun, it may be proper to continue thoſe means of reſolution which moderate the force of the circulation.

With reſpect to the opening of abſceſſes, when completely formed, I refer to the writings on ſurgery *.

271. When an inflammation has taken a tendency to gangrene, that event is to be prevented

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* For a particular account of knowing when abſceſſes are completely formed, at what period they ought to be opened, and the manner of opening them, the reader can conſult no author preferable to Mr Bell.

prevented by every poſſible means; and theſe muſt be different, according to the nature of the ſeveral cauſes occaſioning that tendency, as may be underſtood from what has been already ſaid of them. After a gangrene has, in ſome degree, taken place, it can be cured only by the ſeparation of the dead from the living parts. This, in certain circumſtances, can be performed by the knife, and always moſt properly when it can be ſo done.

In other caſes, it can be done by exciting a ſuppuratory inflammation on the verge of the living part, whereby its coheſion with the dead may be every where broken off, ſo that the latter may fall off by itſelf. While this is doing, it is proper to prevent the further putrefaction of the part, and its ſpreading wider. For this purpoſe, various antiſeptic applications have been propoſed: But it appears to me, that, while the teguments are entire, theſe applications can hardly have any effect; and, therefore, that the fundamental procedure muſt be to ſcarify the part, ſo as to reach the living ſubſtance, and, by the wounds made there, to excite the ſuppuration required. By the ſame inciſions alſo, we give acceſs to antiſeptics, which may both prevent the progreſs of the putrefaction in the dead, and excite the inflammation neceſſary on the verge of the living part *.

272.

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* The author mentioned in the preceding note treats this ſubject in his uſual rational manner, and with no leſs perſpicuity than judgment. Contrary to the opinion of all former writers on gangrene, he diſapproves of ſcarifications, and the ſubſequent application of antiſeptics and ſtimulants. Mr Bell's reaſoning againſt this practice is to the following purport: The degree of inflammation requiſite, and indeed neceſſary, for the ſeparation of the dead parts, is only very ſlight, and, when too violent, it fails to produce the deſired effect. Scarifications, and the ſubſequent application of ſtimulants, which increaſe the inflammation too much, are therefore hurtful. Again, in ſcarifying, there is a conſiderable riſk of wounding large blood veſſels, nerves, or tendons; beſides the diſadvantage of allowing the putreſcent fluids of the

gangrene

272. When the gangrene proceeds from a loſs of tone; and when this, communicated to the neighbouring parts, prevents that inflammation which, as I have ſaid, is neceſſary to the ſeparation of the dead part from the living; it will be proper to obviate

gangrene to enter more freely the ſound parts, by increaſing the ſurface of the wound. With reſpect to the application of antiſeptics, it is juſtly remarked, that, although theſe medicines have the quality of preſerving *dead* animal ſubſtances from corruption, they by no means produce the ſame effect on *living* animal ſubſtances. But the concluding argument is of much greater weight, viz. that, in a long courſe of extenſive practice, no advantages ever accrued from ſcarification.

Theſe objections againſt promiſcuous ſcarification were firſt propoſed by Mr Bell in his Treatiſe on Ulcers, about twelve years ago; and the novelty of the opinion excited the attention of almoſt every practitioner. At preſent, however, it is univerſally adopted, and would, of itſelf, independent of the many improvements Mr Bell has made in ſurgery, perpetuate his juſtly acquired fame.

viate this loſe of tone by tonic medicines given internally; and, for this purpoſe, the Peruvian bark has been found to be eſpecially effectual. That this medicine operates by a tonic power, I have endeavoured to prove above (214.); and, from what is ſaid in (215.), the limitations to be obſerved in employing it may alſo be learned. When the gangrene ariſes from the violence of inflammation, the bark may not only fail of proving a remedy, but may do harm: And its power as a tonic is eſpecially ſuited to thoſe caſes of gangrene which proceed from an original loſs of tone, as in the caſe of palſy and œdema; or to thoſe caſes of inflammation where a loſs of tone takes place, while the original inflammatory ſymptoms are removed *.

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* The bark muſt be given in theſe caſes in large quantities; and, as the pulſe is, in general, very ſmall, Port wine muſt be uſed along with it. Beſide the uſe of theſe remedies, a good nouriſhing diet is abſolutely requiſite,

273. The other terminations of inflammation either do not admit of any treatment, except that of preventing them by the means of reſolution ; or they belong to a treatiſe of ſurgery, rather than to this place.

Having thus, therefore, delivered the general doctrine, I proceed now to conſider the particular genera and ſpecies of inflammation.

It has been hinted above, (263.), that the difference of inflammation ariſes chiefly from the difference of the part affected : I have therefore arranged them, as they are

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requiſite, with ſuch a quantity of ſtrong generous wine as is fully ſufficient to keep up the pulſe, and induce the neceſſary ſlight degree of inflammation. When, indeed, the patient is extremely languid, and much reduced, the warm ſtimulating cardials, as camphire, confectio cardiaca, ſpiritus aromaticus volatilis, &c. may be uſed with advantage.

are CUTANEOUS, VISCERAL, or ARTICULAR; and in this order they are now to be conſidered.

CHAP. II.

OF INFLAMMATION, MORE STRICTLY CUTANEOUS.

274. CUTANEOUS inflammations are of two kinds, commonly diſtinguiſhed by the names of PHLEGMON and ERYSIPELAS.

Of the latter there are two caſes, which ought to be diſtinguiſhed by different appellations. When the diſeaſe is an affection of the ſkin alone, and very little of the whole ſyſtem, or when the affection of the ſyſtem is only ſymptomatical of the external inflammation, I ſhall give the diſeaſe the name of ERYTHEMA; but, when the external inflammation is an exanthema, and ſymptomatical of an affection of the whole ſyſtem, I ſhall then name the diſeaſe ERYSIPELAS *.

275. It is the erythema only that I am to conſider here.

For the diſtinction between Erythema and Phlegmon, I have formerly referred to the characters given of them in our Noſology. See *Synopſ. Noſolog. Meth.* Vol. II. p. 85. gen. vii. ſpec. 1. and 2. But I think it proper now to deliver the characters of them more fully and exactly here, as follows.

A Phlegmon is an inflammatory affection of the ſkin, with a ſwelling, riſing generally to a more conſiderable eminence in the middle of it; of a bright red colour; both the ſwelling and colour being pretty exactly circumſcribed; the whole being attended with a pain of diſtenſion, often of a ſtounding or throbbing kind, and frequently ending in ſuppuration.

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* The Eryſipelas is particularly deſcribed in Articles 696. et ſeq.

An Erythema, Roſe, or St Anthony's Fire, is an inflammatory affection of the ſkin, with hardly any evident ſwelling; of a mixed and not very bright red colour, readily diſappearing upon preſſure, but quickly returning again; the redneſs of no regular circumſcription, but ſpreading unequally, and continuing almoſt conſtantly to ſpread upon the neighbouring part; with a pain like to that from burning; producing bliſters, ſometimes of a ſmall, ſometimes of a larger ſize; and always ending in a deſquamation of the ſcarff-ſkin, but ſometimes in gangrene.

This ſubject I am not to proſecute here, as properly belonging to ſurgery, the buſineſs of which I am ſeldom to enter upon in this work; and ſhall therefore obſerve only as neceſſary here, that the difference of theſe appearances ſeems to depend on the different ſeat of the inflammation. In the phlegmon, the inflammation ſeems to affect eſpecially the veſſels on the internal ſurface of the ſkin communicating with the lax ſubjacent cellular texture; whence a more copious effuſion, and that of ſerum convertible into pus, takes place. In the erythema, the inflammation ſeems to have its ſeat in the veſſels on the external ſurface of the ſkin, communicating with the rete mucoſum, which does not admit of any effuſion, but what ſeparates the cuticle, and gives occaſion to the formation of a bliſter, while the ſmaller ſize of the veſſels admits only of the effuſion of a thin fluid, very ſeldom convertible into pus.

Beſides theſe differences in the circumſtances of theſe two kinds of inflammation, it is probable that they alſo differ with reſpect to their cauſes. Erythema is the effect of all kinds of acrids externally applied to the ſkin; and, when ariſing from an internal cauſe, it is from an acrimony poured out on the ſurface of the ſkin under the cuticle. In the phlegmon, an acrimony is not commonly evident.

276. Theſe differences in the ſeat and cauſes of the phlegmon and erythema being admitted, it will be evident that, when an erythema affects any internal part, it can take place in thoſe only whoſe ſurfaces are covered with an epithelion, or membrane analogous to the cuticle.

277. The ſame diſtinction between the ſeat and cauſes of the two diſeaſes will, as I judge, readily explain what has been delivered by practical writers, with reſpect to the cure * of theſe different cutaneous inflammations.

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* The method of curing an eryſipelas is delivered in articles 708. et ſequent.

flammations. But I ſhall not, however, proſecute this here, for the reaſon given above (275.); and, for the ſame reaſon, ſhall not ſay any thing of the variety of external inflammation, that might otherwiſe be conſidered here *.

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* The cure of erythema is chiefly effected by the antiphlogiſtic regimen already ſufficiently deſcribed. Although bleeding, purging, and the general remedies for reſolving an inflammation, will, in moſt caſes, cure an erythema, yet, as it is a diſeaſe frequently depending on a peculiar acrimony, we ſhall always find great advantage from the external uſe of emollients applied cold, or mucilaginous diluents taken internally. The diſeaſe however, is ſeldom dangerous, and generally terminates favourably.

CHAP.

CHAP. III.

OF

OPHTHALMIA,

OR

INFLAMMATION OF THE EYE.

278. THE inflammation of the eye may be conſidered as of two kinds; according as it has its ſeat in the membranes of the ball of the eye, when I would name it OPHTHALMIA MEMBRANARUM; or, as it has its ſeat in the ſebaceous glands placed in the tarſus, or edges of the eye-lids, in which caſe it may be termed OPHTHALMIA TARSI.

Theſe two kinds are very frequently combined together, as the one may readily excite the other; but they are ſtill to be diſtinguiſhed according as the one or the other may happen to be the primary affection, and properly, as they often ariſe from different cauſes.

279. The inflammation of the membranes of the eye, affects eſpecially, and moſt frequently, the adnata, appearing in a turgeſcence of its veſſels; ſo that the red veſſels which are naturally there, become not only increaſed in ſize, but there appear many more than did in a natural ſtate. This turgeſcence of the veſſels is attended with pain, eſpecially upon the motion of the ball of the eye; and this, like every other irritation applied to the ſurface of the eye, produces an effuſion of tears from the lachrymal gland.

This inflammation commonly, and chiefly, affects the adnata ſpread on the anterior part of the bulb of the eye ; but uſually ſpreads alſo along the continuation of that membrane on the inſide of the palpebræ ; and, as that is extended on the tarſus palpebrarum, the excretories of the ſebaceous glands opening there are alſo frequently affected. When the affection of the adnata is conſiderable, it is frequently communicated to the ſubjacent membranes of the eye, and even to the retina itſelf, which thereby acquires ſo great a ſenſibility, that the ſlighteſt impreſſion of light becomes painful.

280. The inflammation of the membranes of the eye is in different degrees, according as the adnata is more or leſs affected, or according as the inflammation is either of the adnata alone, or of the ſubjacent membranes alſo ; and, upon theſe differences, different ſpecies have been eſtabliſhed, and different appellations given to them But I ſhall not, however, proſecute the conſideration of theſe, being of opinion

that all the caſes of the ophthalmia membranarum differ only in degree, and are to be cured by remedies of the ſame kind more or leſs employed.

The remote cauſes of Ophthalamia are many and various; as,

1. External violence, by blows, contuſions, and wounds, applied to the eyes; and even very ſlight impulſes applied, while the eye-lids are open, to the ball of the eye itſelf, are ſometimes ſufficient for the purpoſe.

2. Extraneous bodies introduced under the eye-lids, either of an acrid quality, as ſmoke and other acrid vapours *, or of a bulk ſufficient to impede the free motion of the eye-lids upon the ſurface of the eye-ball.

3. The

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* Hence chemiſts, when much employed in proceſſes where copious noxious vapours ariſe, ought to be extremely careful to avoid them as much as poſſible.

3. The application of ſtrong light, or even of a moderate light long continued.

4. The application of much heat, and particularly of that with moiſture.

5. Much exerciſe of the eyes in viewing minute objects.

6. Frequent intoxication.

7. Irritation from other and various diſeaſes of the eyes.

8. An acrimony prevailing in the maſs of blood, and depoſited in the ſebaceous glands on the edges of the eye-lids.

9. A change in the diſtribution of the blood, whereby either a more than uſual quantity of blood, and with more than uſual force, is impelled into the veſſels of the head, or whereby the free return of the venous blood from the veſſels of the head is interrupted.

10. A certain conſent of the eyes with the other parts of the ſyſtem, whereby, from a certain ſtate of theſe parts, either a

ſimultaneous, or an alternating affection of the eyes, is produced.

281. The proximate cauſe of Ophthalmia is not different from that of inflammation in general; and the different circumſtances of Ophthalmia may be explained by the difference of its remote cauſes, and by the different parts of the eye which it happens to affect. This may be underſtood from what has been already ſaid; and I ſhall now therefore proceed to conſider the CURE.

282 In the Cure of Ophthalmia, the firſt attention will be always due to the removing of the remote cauſes, and the various means neceſſary for this purpoſe will be directed by the conſideration of theſe cauſes enumerated above.

The Ophthalmia membranarum requires the remedies proper for inflammation in general; and, when the deeper ſeated membranes are affected, and eſpecially when a pyrexia is preſent, large general bleedings may be neceſſary. But this is ſeldom the caſe; as the Ophthalmia, for the moſt part, is an affection purely local, accompanied with little or no pyrexia. General bleedings, therefore, from the arm or foot, have little effect upon it; and the cure is chiefly to be obtained by topical bleedings, that is, blood drawn from veſſels near the inflamed part; and opening the jugular vein or temporal artery, may be conſidered as in ſome meaſure of this kind. It is commonly ſufficient to apply a number of leeches * round the eye; and it is perhaps better ſtill to draw blood from the temples, by cupping and ſcarifying †. In many

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* Ten or twelve may be applied at once, and, when many are employed together, they generally produce a better effect, than if fewer be employed repeatedly: That is, twelve at once are more efficacious than three at a time repeated four times a-day.

† Cupping and ſcarifying the temples ought to be per

many caſes, a very effectual remedy is, that of ſcarifying the internal ſurface of the inferior eye-lid ; and more ſo ſtill, is cutting the turgid veſſels upon the adnata itſelf *.

283.

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performed with very great caution, becauſe of the numerous ramifications of conſiderable branches of arteries in thoſe places.

* Theſe operations require great nicety. For the particular method of performing them, the reader is referred to the writers on ſurgery.

Much harm enſues from theſe operations when injudiciouſly performed; they ought therefore to be refrained from, except when a very ſkilful and expert ſurgeon can be procured. They are ſeldom ſerviceable, except they be repeated ſeveral times.

Cutting the veſſels of the adnata is perhaps the beſt preventative of an opacity of the cornea that we know ; and, wherever there appears the leaſt tendency towards an opacity, the practice ſhould be put in execution. The operation ought to be repeated daily for two, three, or four weeks, or even longer, if a cure is not accompliſhed ſooner.

283. Beſides blood-letting, purging, as a remedy ſuited to inflammation in general, has been conſidered as peculiarly adapted to inflammations in any of the parts of the head, and therefore to Ophthalmia; and it is ſometimes uſeful: But, for the reaſons given before with reſpect to general bleeding, purging in the caſe of Ophthalmia does not prove uſeful in any degree in proportion to the evacuation excited.

284. For relaxing the ſpaſm in the part, and taking off the determination of the fluids to it, bliſtering near the part has commonly been found uſeful *.

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* The part where bliſters are uſually applied in Ophthalmia are behind the ear, or the nape of the neck. The bliſters ought to be kept open by the ſubſequent application of the mild bliſtering ointment, if they aſſume appearances of healing.

Setons in the neck are ſometimes recommended; but,

285. Electrical ſparks taken from the eye will often ſuddenly diſcuſs the inflammation of the adnata; but the effect is ſeldom permanent, and even a frequent repetition ſeldom gives an entire cure.

286. Ophthalmia, as an external inflammation, admits of topical applications. All thoſe, however, that increaſe the heat, and relax the veſſels of the part, prove commonly hurtful; and the admiſſion of cool air to the eye, the proper application of cold water immediately to the ball of the eye, and the application of various cooling and aſtringent medicines, which at the ſame time do not produce much irritation, prove generally uſeful: Even ſpirituous liquors, employed

but, where ſpeedy relief is required, they are of little ſervice, becauſe they ſeldom begin to diſcharge till the expiration of a few days; beſides, they are extremely troubleſome to the patient; and, if the phlogiſtic diatheſis be conſiderable, they ſometimes become ſo exceedingly inflamed as to produce many diſagreeable circumſtances that might have been avoided.

employed in moderate quantity, have often been of ſervice *.

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* A ſolution of a ſcruple of ſugar of lead in four ounces of diſtilled water is a very effectual application; ſome authors recommend equal parts of white vitriol and ſugar of lead diſſolved in diſtilled water. Theſe collyria, as they are called, do infinite miſchief if they are too ſtrong.

If, therefore, the patient complain of the leaſt ſmarting on their application, it will be neceſſary to dilute them with the addition of more diſtilled water. They ought to be applied cold, and pledgets moiſtened with them ought to be frequently renewed when they grow hot or dry. An additional direction may be added, viz. that the ſolution of ſaccharum ſaturni be always made in diſtilled water, eſpecially when it is to be uſed as a collyrium, becauſe the leaſt impregnation of any mineral acid, howſoever combined, decompoſes the ſugar of lead.

Cold poultices of raſped raw potatoes or turnips are ſometimes very efficacious. They may be applied in a fine muſlin bag, and ought to be renewed whenever they grow warm.

287. In the cure of Ophthalmia, much care is requiſite to avoid all irritation, particularly that of light; and the only ſafe and certain means of doing this is by confining the patient to a very dark chamber.

288. Theſe are the remedies of the Ophthalmia membranarum; and, in the Ophthalmia tarſi, ſo far as it is produced by the Ophthalmia membranarum, the ſame remedies may be neceſſary. As, however, the Ophthalmia tarſi may often depend upon an acrimony depoſited in the ſebaceous glands of the part, ſo it may require various internal remedies according to the nature of the acrimony in fault; for which I muſt refer to the conſideration of ſcrophula, ſyphilis, or other diſeaſes with which this Ophthalmia may be connected: And, when the nature of the acrimony is not aſcertained, certain remedies, more generally adapted to the evacuation of acrimony,

mony, ſuch, for inſtance, as mercury, may be employed *.

289. In the Ophthalmia tarſi, it almoſt conſtantly happens that ſome ulcerations are formed on the tarſus. Theſe require the application of mercury or copper, either of which may by itſelf ſometimes entirely cure the affection; and theſe may even be uſeful when the diſeaſe depends upon a fault of the whole ſyſtem.

290. Both in the Ophthalmia membranarum, and in the Ophthalmia tarſi, it is neceſſary

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* If the Ophthalmia be venereal, mercury is the only remedy, and external applications have little effect. If ſcrophula is the cauſe, relief is often ſpeedily procured by an application of the coagulum a luminis, or the unguentum citrinum, now called unguentum hydrargyri nitratum in the London Pharmacopœia. The unguentum tutiæ has been uſed in many caſes with advantage, as has alſo the unguentum ceruſſæ acetatæ. But theſe topical applications never effect a permanent cure.

neceſſary to obviate that gluing or ſticking together of the eye-lids which commonly happens in ſleep ; and this may be done by inſinuating a little of any mild unctuous medicine, of ſome tenacity, between the eye-lids before the patient ſhall go to ſleep *.

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* Hog's lard, freſh preſſed lintſeed oil, or oil of almonds, anſwer this intention very well, or the unguentum ſpermatis ceti of the London Pharmacopœia.

CHAP. IV.

OF PHRENSY, OR PHRENITIS.

291. THIS diſeaſe is an inflammation of the parts contained in the cavity of the cranium; and may affect either the membranes of the brain, or the ſubſtance of the brain itſelf. Noſologiſts have apprehended, that theſe two caſes might be diſtinguiſhed by different ſymptoms, and

therefore by different appellations: But this does not ſeem to be confirmed by obſervation and diſſection; and therefore I ſhall treat of both caſes under the title of Phrenſy, or Phrenitis.

292. An idiopathic phrenſy is a rare occurrence, a ſympathetic more frequent; and the aſcertaining either the one or the other is, upon many occaſions, difficult. Many of the ſymptoms by which the diſeaſe is moſt commonly judged to be preſent have appeared, when, from certain conſiderations, it was preſumed, and even from diſſection it appeared, that there had been no internal inflammation; and, on the other hand, diſſections have ſhown, that the brain had been inflamed, when few of the peculiar ſymptoms of phrenſy had before appeared *.

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* This ſentence is very obſcure; the Author meant to ſay, that the diagnoſtic ſymptoms of this diſeaſe are uncertain.

293. The ſymptoms by which this diſeaſe may be moſt certainly known, are, a vehement pyrexia, a violent deep-ſeated head-ach, a redneſs and turgeſcence of the face and eyes, an impatience of light or noiſe, a conſtant watching, and a delirium impetuous and furious. Some noſologiſts have thought theſe ſymptoms peculiar to an inflammation of the membranes, and that the inflammation of the ſubſtance of the brain was to be diſtinguiſhed by ſome degree of coma attending it. It was for this reaſon, that, in the Noſology, I added the Typhomania to the character of Phrenitis: But, upon farther reflection, I find no proper foundation for this; and, if we paſs from the characters above delivered, there will be no means of fixing the variety that occurs.

I am here, as in other analogous caſes, of opinion, that the ſymptoms above mentioned of an acute inflammation always mark inflammations of membranous parts;

and that an inflammation of the paronchyma or ſubſtance of viſcera exhibits, at leaſt commonly, a more chronic affection.

294. The remote cauſes of phrenſy are all thoſe which directly ſtimulate the membranes or ſubſtance of the brain; and particularly all thoſe which increaſe the impetus of the blood in the veſſels of the brain. Among theſe, the expoſure of the naked head to the direct rays of a very warm ſun, is a frequent cauſe. The paſſions of the mind, and certain poiſons, are amongſt the remote cauſes of phrenſy; but, in what manner they operate, is not well underſtood *.

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* Practitioners have in general admitted two kinds of phrenſy, viz. the idiopathic or true phrenſy, and the ſymptomatic. The former is what the Author deſcribes in the text; and, as he has omitted to deſcribe the latter, which, in Article 292. he acknowledges to be the more frequent of the two, I ſhall enumerate its ſymptoms.

295. The cure of phrenſy is the ſame with that of inflammation in general; but, in

The ſymptomatic phrenſy is conſtantly preceded by ſome very acute inflammatory fever. Its approach may be ſuſpected by a ſuppreſſion of the excretions, by colourleſs ſtools, by a black, dry, and rough tongue, by pale and watery urine, which ſometimes has black or dark brown clouds floating in it, by a deſire but inability to ſleep, by picking the bed-clothes, by the eyes appearing fierce, and the veſſels of the albuginea becoming turgid, and by a few drops of blood diſtilling from the noſe.

When moſt of theſe ſymptoms appear in inflammatory fevers, we juſtly apprehend an attack of the phrenſy, and ought to have immediate recourſe to ſuch remedies as will leſſen its violence, or altogether prevent its acceſs. Large bleedings, if the pulſe permits, muſt be made on the lower extremities, emollient glyſters are to be frequently injected, laxatives adminiſtered, fomentations applied to the feet and legs, cupping glaſſes applied on the thighs, and the patient muſt be forced to drink plentifully, for he is ſeldom thirſty in theſe caſes, although his tongue be parched. Beſide theſe general remedies, peculiar attention muſt be paid to the primary;

in phrenſy, the moſt powerful remedies are to be immediately employed. Large and repeated blood-letting is eſpecially neceſſary; and the blood ſhould be drawn from veſſels as near as poſſible to the part affected. The opening of the temporal artery has been recommended, and with ſome reaſon: But the practice is attended with inconvenience; and I apprehend that opening the jugular veins may prove more effectual;

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ry diſeaſe; and the treatment of the ſymptomatic phrenſy will vary according to the nature of the diſeaſe by which it is produced.

No part of the practice of phyſic requires more judgment and ſagacity in the practitioner, than aſcertaining the proper mode of treating the ſymptomatic phrenſy in different fevers. To enter fully into the ſubject, would require more room than theſe notes allow. I can therefore only recommend the young practitioner to pay great attention to it. He will find many uſeful practical directions for the treatment of theſe caſes, in moſt of the medical writers, both antient and modern, eſpecially Sydenham and Van Swieton.

effectual; but, at the ſame time, it will be generally proper to draw blood from the temples by cutting and ſcarifying.

296. It is probable that purging, as it may operate by revulſion, may be of more uſe in this than in ſome other inflammatory affections.

For the ſame purpoſe of revulſion, warm pediluvia are a remedy; but, at the ſame time, ſomewhat ambiguous. The taking off the force of the blood in the veſſels of the head by an erect poſture, is generally uſeful.

297. Shaving of the head is always proper and neceſſary for the admiſſion of other remedies. Bliſtering is commonly uſeful in this diſeaſe, but chiefly when applied near to the part affected *.

298.

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* It has been uſual to apply a large bliſtering plaiſter

298. Every part of the antiphlogiſtic regimen is here neceſſary, and particularly the admiſſion of cold air. Even cold ſubſtances, applied cloſe to the head, have been found ſafe, and highly uſeful; and the application of ſuch refrigerants as vinegar is certainly proper *.

299.

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ter over the whole head, and ſuffer it to remain on for eight and forty hours. This, however, hinders the application of other very powerful remedies. Shaving the head of a frantic patient is always a troubleſome operation; but the very great benefit ariſing from it renders it abſolutely neceſſary in all caſes; and the phyſician ought therefore to adviſe it on the firſt ſuſpicion of an approaching phrenſy.

* Many eminent practitioners have diſſuaded the uſe of theſe refrigerant applications to the newly ſhaven head; the immediate relief which the mere ſhaving generally procures ſeems to indicate the propriety of the practice; and experience has not diſcovered any material diſadvantages attending it, but, on the contrary, much benefit accruing from it.

299. It appears to me certain, that opiates are hurtful in every inflammatory ſtate of the brain; and it is to be obſerved, that, from the ambiguity mentioned in (292.) the accounts of practitioners, with regard to the juvantia and laedentia in this diſeaſe, are of very uncertain application.

CHAP. V.

OF THE

QUINSY,

OR

CYNANCHE.

300. THIS name is applied to every inflammation of the internal fauces; but theſe inflammations are different, according to the part of the fauces which may be affected, and according to the nature of the inflammation. In the Noſology,

gy, therefore, after giving the character of the Cynanche as a genus, I have diſtinguiſhed five different ſpecies, which muſt here likewiſe be ſeparately conſidered.

SECT. I.

OF THE

CYNANCHE TONSILLARIS.

301. This is an inflammation of the mucous membrane of the fauces, affecting eſpecially that congeries of mucous follicles which forms the tonſils, and ſpreading from thence along the velum and uvula, ſo as frequently to affect every part of the mucous membrane.

302.

302. The diſeaſe appears by ſome tumour, ſometimes conſiderable, and by a redneſs of the parts; is attended with a painful and difficult deglutition; with a pain ſometimes ſhooting into the ear; with a troubleſome clammineſs of the mouth and throat; with a frequent, but difficult excretion of mucus; and the whole is accompanied with a pyrexia.

303. This ſpecies of quinſy is never contagious. It terminates frequently by reſolution *, ſometimes by ſuppuration, but hardly ever by gangrene; although, in this diſeaſe, ſome ſloughy ſpots, commonly ſuppoſed to be forerunners of gangrene, ſometimes appear upon the fauces.

304. This diſeaſe is commonly occaſioned by cold externally applied, particularly a-

bout

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* As the moſt frequent termination of this diſeaſe is by reſolution, this mode of cure muſt always be attempted, and will ſeldom fail of proving ſucceſsful.

bout the neck. It affects eſpecially the young and ſanguine, and a diſpoſition to it is often acquired by habit ; ſo that, from every conſiderable application of cold to any part of the body, this diſeaſe is readily induced. It occurs eſpecially in ſpring and autumn, when viciſſitudes of heat and cold frequently take place. The inflammation and tumour are commonly at firſt moſt conſiderable in one tonſil ; and afterwards, abating in that, increaſe in the other.

305. In the cure of this inflammation, ſome bleeding may be proper ; but large general bleedings will ſeldom be neceſſary. The opening of the ranular veins ſeems to be an inſignificant remedy ; and leeches ſet upon the external fauces are of more efficacy.

306. At the beginning of the diſeaſe, full vomiting has been frequently found to be of great ſervice *.

307.

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* The formula of an emetic may be ſeen in the note at page 205.

307. This inflammation may be often relieved by moderate aſtringents, and particularly by acids applied to the inflamed parts *. In many caſes, however, nothing has been found to give more relief than the vapour of warm water received into the fauces by a proper apparatus.

308. The other remedies of this diſeaſe are rubefacient or bliſtering medicines, applied externally to the neck; and, with theſe, the employment of antiphlogiſtic purgatives †, as well as every part of the anti-

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* Various have been the opinions of phyſicians reſpecting the kind of gargles proper in theſe caſes. A pint of tincture of roſes, with two drams of honey, has often been found ſerviceable. The following gargle is frequently uſed with ſucceſs. Boil an ounce of oak-bark, bruiſed in a quart of water, till half is evaporated, and to the ſtrained liquor add an ounce of honey of roſes, and a dram of alum. Sage tea, with honey, is in common uſe, and frequently anſwers every purpoſe.

† Glauber's ſalts anſwer the end of purges in theſe caſes

antiphlogiſtic regimen, excepting the application of cold.

309. This diſeaſe, as we have ſaid, often terminates by reſolution, frequently accompanied with ſweating; which is therefore to be prudently favoured and encouraged *.

310.

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caſes very well, eſpecially if the patient drinks copiouſly during the operation.

* Dover's powder is an excellent ſudorific in theſe caſes. The method of giving it has been deſcribed in a former note, ſee page 194. Many other ſudorifics, however, are found to anſwer tolerably well, as wine-whey, whey made with dulcified ſpirit of nitre, vinegar whey, ſage tea, with ſeveral other drinks of a ſimilar kind. The following bolus is often very efficacious, eſpecially when the patient drinks largely of ſage or balm tea.

℞. Camphor.

310. When this diſeaſe ſhall have taken a tendency to ſuppuration, nothing will be more uſeful, than the frequent taking into the fauces the ſteams of warm water *. When the abſceſs is attended with much

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℞ Camphor. gr. viii.
Opii pur. gr. i.
Tart. vitriolat. ℈i.
Tere in mortario marmorio; et adde
Confect. cardiac. ʒi. vel q. s. ut fiat bolus.

Small doſes of tartar emetic taken in ſuch quantities as to produce a ſlight nauſea, without vomiting, are alſo good ſudorifics. Two table-ſpoonfuls of the following julep may be taken every half-hour till the effect be produced, drinking, at the ſame time, plentifully of ſome warm diluent.

℞ Tartar emetic. gr. iii.
Aq. font. ℥vii.
Syr. Papaveris rubri, ℥i.
M. f. julap.

* Very convenient apparatus for this purpoſe are made by moſt tin-workers.

Beſide

much ſwelling, if it break not ſpontaneouſly, it ſhould be opened by a lancet; and this does not require much caution, as even the inflammatory ſtate may be relieved by ſome ſcarification of the tonſils. I have never had occaſion to ſee any caſe requiring bronchotomy.

Beſide the ſteam of warm water here recommended, external applications to the throat and ſides of the neck have a conſiderable effect in forwarding the ſuppuration, as warm poultices, fomentations, &c.

SECT. II.

OF THE

CYNANCHE MALIGNA.

311. This is a contagious diſeaſe, ſeldom ſporadic, and commonly epidemic. It attacks perſons of all ages, but more commonly thoſe in a young and infant ſtate. It attacks perſons of every conſtitution when expoſed to the contagion, but moſt readily the weak and infirm.

312. This diſeaſe is uſually attended with a conſiderable pyrexia; and the ſymptoms

toms of the acceſſion of this, ſuch as frequent cold ſhiverings, ſickneſs, anxiety, and vomiting, are often the firſt appearances of the diſeaſe. About the ſame time, a ſtiffneſs is felt in the neck, with ſome uneaſineſs in the internal fauces, and ſome hoarſeneſs of the voice. The internal fauces, when viewed, appear of a deep red colour, with ſome tumour; but this laſt is ſeldom conſiderable, and deglutition is ſeldom difficult or painful. Very ſoon a number of white or aſh-coloured ſpots appear upon the inflamed parts. Theſe ſpots ſpread and unite, covering almoſt the whole fauces with thick ſloughs; which falling off, diſcover ulcerations. While theſe ſymptoms proceed in the fauces, they are generally attended with a coryza, which pours out a thin acrid and fetid matter, excoriating the noſtrils and lips. There is often alſo, eſpecially in infants, a frequent purging; and a thin acrid matter flows from the anus, excoriating this, and the neighbouring parts.

313. With theſe ſymptoms, the pyrexia proceeds with a ſmall, frequent, and irregular pulſe; and there occurs a manifeſt exacerbation every evening, and ſome remiſſion in the mornings. A great debility appears in the animal functions; and the ſenſorium is affected with delirium, frequently with coma.

314. On the ſecond day, or ſometimes later, efflorеſcences appear upon the ſkin, which are ſometimes in ſmall points hardly eminent; but, for the moſt part, in patches of a red colour, ſpreading and uniting ſo as to cover the whole ſkin. They appear firſt about the face and neck, and in the courſe of ſome days ſpread by degrees to the lower extremities. The ſcarlet redneſs is often conſiderable on the hands and extremities of the fingers, which feel ſtiff and ſwelled. This eruption is often irregular, as to the time of its appearance, as to its ſteadineſs, and as to the time of its duration. It uſually continues four days, and

goes off by ſome deſquamation of the cuticle: but, neither on its firſt appearance, nor on its deſquamation, does it always produce a remiſſion of the pyrexia, or of the other ſymptoms.

315. The progreſs of the diſeaſe depends on the ſtate of the fauces and of the pyrexia. When the ulcers on the fauces, by their livid and black colour, by the fetor of the breath, and by many marks of acrimony in the fluids, ſhow a tendency to gangrene, this takes place to a conſiderable degree; and, the ſymptoms of a putrid fever conſtantly increaſing, the patient dies, often on the third day, ſometimes later, but for the moſt part before the ſeventh. The acrimony poured out from the diſeaſed fauces muſt neceſſarily, in part, paſs into the pharynx, and there ſpread the infection into the œſophagus, and ſometimes through the whole of the alimentary canal, propagating the putrefaction,

tion, and often exhauſting the patient by a frequent diarrhœa.

The acrid matter poured out in the fauces being again abſorbed, frequently occaſions large ſwellings of the lymphatic glands about the neck, and ſometimes to ſuch a degree as to occaſion ſuffocation.

It is ſeldom that the organs of reſpiration eſcape entirely unhurt, and very often the inflammatory affection is communicated to them. From diſſections it appears, that, in the Cynanche maligna, the larynx and trachea are often affected in the ſame manner as in the Cynanche trachealis; and it is probable, that, in conſequence of that affection, the Cynanche maligna often proves fatal by ſuch a ſudden ſuffocation as happens in the proper Cynanche trachealis; but there is reaſon to ſuſpect, that, upon this ſubject, diſſectors have not always diſtinguiſhed properly between the two diſeaſes.

316. Theſe are the ſeveral fatal terminations of the Cynanche maligna ; but they do not always take place. Sometimes the ulcers of the fauces are of a milder nature ; and the fever is more moderate, as well as of a leſs putrid kind. And when, upon the appearance of the efflorescence on the ſkin, the fever ſuffers a remiſſion ; when the efflorescence continues for three or four days, till it has ſpread over the whole body, and then ends by a deſquamation, giving a further remiſſion of the fever ; this often entirely terminates by gentle ſweats, on or before the ſeventh day ; and the reſt of the diſeaſe terminates in a few days more, by an excretion of ſloughs from the fauces ; while ſleep, appetite, and the other marks of health, return.

From what is ſaid in this, and the preceding paragraph, the prognoſtics in this diſeaſe may be readily learned.

317. In the cure of this diſeaſe, its ſcep-

tic tendency is chiefly to be kept in view. The debility, with which it is attended, renders all evacuation by bleeding and purging improper, except in a few inſtances where the debility is leſs, and the inflammatory ſymptoms more conſiderable. The fauces are to be preſerved from the effects of the acrid matter poured out upon them, and are therefore to be frequently waſhed out by antiſeptic gargles * or in-

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* When the violence of the ſymptoms is moderate, and when the ulceration is ſlight, ſage tea, or tea made of roſe leaves, or both together, may be ſufficient. A gargle made of a pint of ſage and roſe tea, three ſpoonfuls of vinegar, and one ſpoonful of honey, has been found as efficacious as any of the ſharper antiſeptics with the mineral acids. Dr Fothergill's gargle is,

℞. Decoct. pectoral. ℥xii. cui inter coquendum, adde
Rad. contrayerv. contuſ. ℥ſs.
Liquori colato admiſce,
Acet vin. alb. ℥ii,
Tinct. myrrh. ℥i.
Mel. opt. ʒvi.

jections; and the ſceptic tendency of the whole ſyſtem ſhould be guarded againſt and corrected by internal antiſeptics, eſpecially by the Peruvian bark given in ſubſtance, from the beginning, and continued through the courſe of the diſeaſe *. Emetics,

But he often uſed it with a dram of the Mel Egyptiacum diſſolved in two ounces of it.

The Mel Egyptiacum is a very harſh application, and ought to be cautiouſly uſed. If the ſloughs caſt off ſo ſlowly as to require a powerful application, it is better practice to touch them with Mel Egyptiacum by means of an armed probe, than to uſe gargles, in which it is an ingredient. In this diſeaſe, a ſtrict attention muſt be given to the uſe of gargles and injections for the throat, becauſe the cure ſeems to depend in part on procuring a diſcharge from the glands of the fauces which theſe gargles induce, and alſo becauſe they are the only means of retarding the progreſs of the ulcers.

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* The quantity of bark given ought to be very conſiderable, viz. as much as the ſtomach and inteſtines can poſſibly bear; half a drachm or two ſcruples every hour,

tics, both by vomiting and nauſeating, prove uſeful, eſpecially when employed

hour, with a glaſs of good Port wine. A ſcruple of confectio cardiaca, joined with each doſe of the bark, has a double effect of making the bark leſs nauſeous, and of preventing, in ſome meaſure, a tendency to a diarrhœa; but opium is a ſovereign remedy for removing this ſymptom when it is actually preſent.

In adminiſtering the bark, great care muſt be taken to avoid a diarrhœa, which is a very dangerous ſymptom in any period of the diſeaſe, but eſpecially after the third or fourth day, when the patient is in a conſiderable ſtate of debility.

Children are more frequently attacked with this diſeaſe than adults; and it is ſometimes extremely difficult to prevail on them to take a ſufficient quantity of this neceſſary and valuable, though nauſeous medicine. In theſe caſes, glyſters with powdered bark have been uſed with very great ſucceſs. Two drachms of the fine powder may be given in five or ſix ounces of barley water, every three or four hours, to very young children, and half an ounce, or ſix drachms, to children of 8 or 10 years old, in three quarters of a pint of early in the diſeaſe. When any conſiderable tumour occurs, bliſters applied externally will be of ſervice, and, in any caſe, may be fit to moderate the internal inflammation *.

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barley-water. If the firſt glyſter comes away too ſpeedily, two or three grains of opium may be added to the ſubſequent glyſters.

* In addition to the method of cure here delivered, it may be proper to obſerve, that, as the cure depends much on the removal of every thing putrid from the patient, it is abſolutely neceſſary to have the room well ventilated, but not with cold air. The reaſon for this precaution is, that the patient always complains of the leaſt admiſſion of cold air, becoming ſick and oppreſſed, probably in conſequence of the ſudden diſappearance of the efflоreſcence which always accompanies the diſeaſe. The linen ought frequently to be changed, the patient kept clean, the mouth and throat frequently waſhed, and great plenty of liquid vegetable nutriment muſt be given, with generous wine.

A hemorrhage from the noſe, mouth, or ears, very frequently occurs in the later ſtages of a malignant ſore throat. This diſcharge is by no means critical, but always a dangerous ſymptom, and muſt be ſtopped with the utmoſt expedition. It is the conſequence of ſome arterial branch being corroded by the mortification. If the hemorrhage withſtands the uſual means of tents dipt in vinegar, or a ſolution of alum, &c. recourſe muſt be had to opium and bark; and the Port wine muſt be given ſparingly.

In the advanced ſtages, a diarrhœa frequently appears, eſpecially in children; it proceeds from the putrid and acrid matter of the ulcers being received into the inteſtines. It can only be prevented, or effectually removed, by a careful attention to keep the mouth as clean as poſſible.

SECT. III.

OF THE

CYNANCHE TRACHEALIS*.

318. This name has been given to an inflammation of the glottis, larynx, or upper

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* This diſeaſe has been ſuppoſed to be new, and confined chiefly to infants. It is, however, deſcribed by many of both the antient and modern writers. Boerhaave deſcribes it in his 801ſt and 802d Aphoriſm. It is, indeed, uncommon in adults, and moſt frequent in infants. It was never rightly underſtood, however, till Dr Home, the Profeſſor of the Materia Medica in this Univerſity, inveſtigated its nature, and pointed out the only effectual method of cure.

per part of the trachea, whether it affect the membranes of theſe parts, or the muſcles adjoining. It may ariſe firſt in theſe parts, and continue to ſubſiſt in them alone; or it may come to affect theſe parts from the Cynanche tonſillaris or maligna ſpreading into them.

319. In either way it has been a rare occurrence; and few inſtances of it have been marked and recorded by phyſicians. It is to be known by a peculiar ringing ſound of the voice, by difficult reſpiration, with a ſenſe of ſtraitening about the larynx, and by a pyrexia attending it.

320. From the nature of theſe ſymptoms, and from the diſſection of the bodies of perſons who had died of this diſeaſe, there is no doubt of its being of an inflammatory nature. It does not, however, always run the courſe of inflammatory affections, but frequently produces ſuch an obſtruction of

the paſſage of the air, as ſuffocates, and thereby proves ſuddenly fatal.

321. If we judge rightly of the nature of this diſeaſe, it will be obvious, that the cure of it requires the moſt powerful remedies of inflammation, to be employed upon the very firſt appearance of the ſymptoms. When a ſuffocation is threatened, whether any remedies can be employed to prevent it, we have not had experience to determine.

322. The accounts which books have hitherto given us of inflammations of the larynx, and the parts connected with it, amount to what we have now ſaid; and the inſtances recorded have almoſt all of them happened in adult perſons; but there is a peculiar affection of this kind happening eſpecially to infants, which till lately has been little taken notice of. Dr Home is the firſt who has given any diſtinct account of it; but, ſince he wrote, ſeveral other

authors have taken notice of it, (ſee MICHAELIS *de Angina Polypoſa ſive membranaceo, Argentorati* 1778); and have given different opinions with regard to it. Concerning this diverſity of opinions, I ſhall not at preſent inquire; but ſhall deliver the hiſtory and cure of this diſeaſe, in ſo far as they have ariſen from my own obſervation, from that of Dr Home, and of other ſkilful perſons in this neighbourhood.

323. This diſeaſe ſeldom attacks infants till after they have been weaned. After this period, the younger they are, the more they are liable to it. The frequency of it becomes leſs as children become more advanced; and there are no inſtances of children above twelve years of age being affected with it. It attacks children of the midland countries, as well as thoſe who live near the ſea. It does not appear to be contagious; and its attacks are frequently repeated in the ſame child. It is often

manifeſtly the effect of cold applied to the body; and therefore appears moſt frequently in the winter and ſpring ſeaſons. It very commonly comes on with the ordinary ſymptoms of a catarrh; but ſometimes the peculiar ſymptoms of the diſeaſe ſhow themſelves at the very firſt.

324. Theſe peculiar ſymptoms are the following: A hoarſeneſs, with ſome ſhrillneſs and ringing ſound, both in ſpeaking and coughing, as if the noiſe came from a brazen tube. At the ſame time, there is a ſenſe of pain about the larynx, ſome difficulty of reſpiration, with a whizzing ſound in inſpiration, as if the paſſage of the air were ſtraitened. The cough which attends it is commonly dry; and, if any thing be ſpit up, it is a matter of a purulent appearance, and ſometimes films reſembling portions of a membrane. Together with theſe ſymptoms, there is a frequency of pulſe, a reſtleſſneſs, and an uneaſy ſenſe of heat. When the internal

fauces are viewed, they are ſometimes without any appearance of inflammation: but frequently a redneſs, and even ſwelling appear: And ſometimes in the fauces there is an appearance of matter like to that rejected by coughing. With the ſymptoms now deſcribed, and particularly with great difficulty of breathing, and a ſenſe of ſtrangling in the fauces, the patient is ſometimes ſuddenly taken off.

325. There have been many diſſections made of infants who had died of this diſeaſe; and almoſt conſtantly there has appeared a preternatural membrane lining the whole internal ſurface of the upper part of the trachea, and extending in the ſame manner downwards into ſome of its ramifications. This preternatural membrane may be eaſily ſeparated, and ſometimes has been found ſeparated in part, from the ſubjacent proper membrane of the trachea. This laſt is commonly found entire, that is, without any appearance of eroſion or ulceration;

ration; but it frequently ſhows the veſtiges of inflammation, and is covered by a matter reſembling pus, like to that rejected by coughing; and very often a matter of the ſame kind is found in the bronchiæ, ſometimes in conſiderable quantity.

326. From the remote cauſes of this diſeaſe; from the catarrhal ſymptoms commonly attending it; from the pyrexia conſtantly preſent with it; from the ſame kind of preternatural membrane being found in the trachea when the cynanche maligna is communicated to it; and, from the veſtiges of inflammation on the trachea diſcovered upon diſſection; we muſt conclude, that the diſeaſe conſiſts of an inflammatory affection of the mucous membrane of the larynx and trachea, producing an exudation analogous to that found on the ſurface of inflamed viſcera, and appearing partly in a membranous cruſt, and partly in a fluid reſembling pus.

327. Though this diſeaſe manifeſtly conſiſts of an inflammatory affection, it does not commonly end either in ſuppuration or gangrene. The peculiar and troubleſome circumſtance of the diſeaſe ſeems to conſiſt in a ſpaſm of the muſcles of the glottis, which, by inducing a ſuffocation, prevents the common conſequences of inflammation.

328. When this diſeaſe terminates in health, it is by a reſolution of the inflammation, by a ceaſing of the ſpaſm of the glottis, by an expectoration of the matter exuding from the trachea, and of the cruſts formed there; and frequently it ends without any expectoration, or at leaſt with ſuch only as attends an ordinary catarrh.

329. When the diſeaſe ends fatally, it is by a ſuffocation; ſeemingly, as we have ſaid, depending upon a ſpaſm affecting the glottis; but ſometimes, probably, depending

upon a quantity of matter filling the bronchiæ.

330. As we ſuppoſe this diſeaſe to be an inflammatory affection, ſo we attempt the cure of it by the uſual remedies of inflammation, and which, for the moſt part, I have found effectual. Bleeding, both general and topical *, has often given immediate relief; and, by being repeated, has entirely

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* The topical bleeding is beſt performed by leeches. Three or four may be applied at once on each ſide of the trachea, or on the trachea itſelf. Notwithſtanding this recommendation of topical bleeding, previous general bleeding is abſolutely neceſſary in every caſe, and ought never to be omitted. It frequently produces relief even while the blood is flowing from the vein; but, in theſe caſes, it is imprudent to ſtop the evacuation, even on the total removal of the ſymptoms. As much blood muſt be drawn as the infant can bear to loſe, and leeches ought moreover to be applied, as above directed; for it frequently happens, that, when all the ſymptoms ſuddenly diſappear, the diſeaſe returns in a few hours with redoubled violence, and ſpeedily puts an end to the child's life.

entirely cured the diſeaſe. Bliſtering alſo, near to the part affected, has been found uſeful. Upon the firſt attack of the diſeaſe, vomiting, immediately after bleeding, ſeems to be of conſiderable uſe, and ſometimes ſuddenly removes the diſeaſe. In every ſtage of the diſeaſe, the antiphlogiſtic regimen is neceſſary, and particularly the frequent uſe of laxative glyſters *. Though we ſuppoſe that a ſpaſm affecting the glottis is often fatal in this diſeaſe, I have not found antiſpaſmodic medicines to be of any uſe.

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* Laxative glyſters are to be carefully diſtinguiſhed from purging glyſters, which generally irritate too violently, and thus increaſe the inflammatory diatheſis. It is of little conſequence what the compoſitions of glyſters be, provided they contain ſome Glauber's or Epſom ſalt, and are ſufficiently large. The common glyſter with milk and water, and a little Epſom ſalt, anſwers ſufficiently well.

SECT. IV.

OF THE

CYNANCHE PHARYNGÆA.

331. In the Cynanche tonſillaris, the inflammation of the mucous membrane often ſpreads upon the pharynx, and into the beginning of the œſophagus, and thereby renders deglutition more difficult and uneaſy; but ſuch a caſe does not require to be diſtinguiſhed as a different ſpecies from the common Cynanche tonſillaris; and only requires that blood-letting, and other remedies, ſhould be employed with greater diligence than in ordinary caſes. We have

never ſeen any caſe in which the inflammation began in the pharynx, or in which this part alone was inflamed: But practical writers have taken notice of ſuch a caſe; and to them, therefore, I muſt refer, both for the appearances which diſtinguiſh it, and for the method of cure.

SECT. V.

OF THE

CYNANCHE PAROTIDÆA.

332. THIS is a diſeaſe known to the vulgar, and among them has got a peculiar appellation, in every country of Europe *; but has been little taken notice of by medical writers. It is often epidemic, and manifeſtly contagious. It comes on with the uſual ſymptoms of pyrexia, which is ſoon

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* It is called here, and in many parts of Great Britain, *The Mumps.*

ſoon after attended with a conſiderable tumour of the external fauces and neck. This tumour appears firſt as a glandular moveable tumour at the corner of the lower jaw; but the ſwelling ſoon becomes uniformly diffuſed over a great part of the neck, ſometimes on one ſide only, but more commonly on both. The ſwelling continues to increaſe till the fourth day; but from that period it declines, and in a few days more paſſes off entirely. As the ſwelling of the fauces recedes, ſome tumour affects the teſticles in the male ſex, or the breaſts in the female. Theſe tumours are ſometimes large, hard, and ſomewhat painful; but, in this climate, are ſeldom either very painful, or of long continuance. The pyrexia attending this diſeaſe is commonly ſlight, and recedes with the ſwelling of the fauces; but ſometimes, when the ſwelling of the teſticles does not ſucceed to that of the fauces, or when the one or the other has been ſuddenly repreſſed, the pyrexia becomes more conſiderable, is often attended with delirium, and has ſometimes proved fatal.

333. As this diſeaſe commonly runs its courſe without either dangerous or troubleſome ſymptoms, ſo it hardly requires any remedies. An antiphlogiſtic regimen, and avoiding cold, are all that will be commonly neceſſary. But when, upon the receding of the ſwellings of the teſticles in males, or of the breaſts in females, the pyrexia comes to be conſiderable, and threatens an affection of the brain, it will be proper, by warm fomentations, to bring back the ſwelling; and, by vomiting, bleeding, or bliſtering, to obviate the conſequences of its abſence.

CHAP. VI.

OF PNEUMONIA, OR PNEUMONIC INFLAMMATION.

334. UNDER this title I mean to comprehend the whole of the inflammations affecting either the viſcera of the thorax, or the membrane lining the interior ſurface of that cavity: For neither do our diagnoſtics ſerve to aſcertain exactly

the ſeat of the diſeaſe; nor does the difference in the ſeat of the diſeaſe exhibit any conſiderable variation in the ſtate of the ſymptoms, nor lead to any difference in the method of cure.

335. Pneumonic inflammation, however various in its ſeat, ſeems to me to be always known and diſtinguiſhed by the following ſymptoms: Pyrexia, difficult breathing, cough, and pain in ſome part of the thorax. But theſe ſymptoms are, on different occaſions, variouſly modified.

336. The diſeaſe almoſt always comes on with a cold ſtage, and is accompanied with the other ſymptoms of pyrexia; though, in a few inſtances, the pulſe may not be more frequent, nor the heat of the body increaſed beyond what is natural. Sometimes the pyrexia is from the beginning accompanied with the other ſymptoms; but frequently it is formed for ſome hours before the other ſymptoms become

conſiderable, and particularly before the pain be felt. For the moſt part, the pulſe is frequent *, full, ſtrong, hard, and quick †; but, in a few inſtances, eſpecially in the advanced ſtate of the diſeaſe, the pulſe is weak and ſoft, and at the ſame time irregular.

337. The difficulty of breathing is always preſent, and moſt conſiderable in inſpiration; both becauſe the lungs do not eaſily admit of a full dilatation, and becauſe

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* A frequent pulſe is when there is a great number of ſtrokes in a given time.

† A quick pulſe is when the ſtroke itſelf is quick, although the number in a given time be not very great.

It is therefore no tautology to mention both *frequent* and *quick*, as they are really diſtinct, and may be both preſent at once; but, if the pulſe be above an hundred in a minute, the phyſician muſt have a very nice ſenſe of feeling to diſtinguiſh between a quick and a ſlow beat.

cauſe the dilatation aggravates the pain attending the diſeaſe. The difficulty of breathing is alſo greater when the patient is in one poſture of his body rather than another. It is generally greater when he lies upon the ſide affected; but ſometimes the contrary happens. Very often the patient cannot lie eaſy upon either ſide, finding eaſe only when lying on his back; and ſometimes he cannot breathe eaſily, except when in ſomewhat of an erect poſture.

338. A cough always attends this diſeaſe; but, in different caſes, is more or leſs urgent and painful. It is ſometimes dry, that is, without any expectoration, eſpecially in the beginning of the diſeaſe; but more commonly it is, even from the firſt, moiſt, and the matter ſpit up various, both in conſiſtence and colour, and frequently it is ſtreaked with blood *.

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* Young practitioners ſhould not be alarmed at this ſymptom;

339. The pain attending this diſeaſe is, in different caſes, felt in different parts of the thorax, but moſt frequently in one ſide. It has been ſaid to affect the right ſide more frequently than the left; but this is not certain; while, on the other hand, it is certain that the left ſide has been very often affected. The pain is felt ſometimes as if it were under the ſternum; ſometimes in the back between the ſhoulders; and, when in the ſides, its place has been higher or lower, more forward or backward: But the place of all others moſt frequently affected is about the ſixth or ſeventh rib, near the middle of its length, or a little more forward. The pain is often ſevere and pungent; but ſometimes more dull and obtuſe, with a ſenſe of weight

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ſymptom; nor ſhould they ſuppoſe it a dangerous one: it is, on the contrary, a ſalutary ſymptom, and ought not to be reſtrained, either by too rigorous an adherence to the antiphlogiſtic regimen, or by the uſe of ſtyptics and other aſtringents.

weight rather than of pain. It is moſt eſpecially ſevere and pungent when occupying the place laſt mentioned. For the moſt part, it continues fixed in one place; but ſometimes ſhoots from the ſide to the ſcapula on one hand, or to the ſternum and clavicle on the other.

340. The varying ſtate of ſymptoms now mentioned does not always aſcertain preciſely the ſeat of the diſeaſe. To me it ſeems probable that the diſeaſe is always ſeated, or at leaſt begins, in ſome part of the pleura; taking that membrane in its greateſt extent, as now commonly underſtood; that is, as covering not only the internal ſurface of the cavity of the thorax, but alſo as forming the mediaſtinum, and as extended over the pericardium, and over the whole ſurface of the lungs.

341. There is, therefore, little foundation for diſtinguiſhing this diſeaſe by different appellations taken from the part

which may be ſuppoſed to be chiefly affected. The term Pleuriſy might with propriety be applied to every caſe of the diſeaſe ; and has been very improperly limited to that inflammation which begins in, and chiefly affects, the *pleura coſtalis.* I have no doubt that ſuch a caſe does truly occur : But, at the ſame time, I apprehend it to be a rare occurrence ; and that the diſeaſe much more frequently begins in, and chiefly affects, the pleura inveſting the lungs, producing all the ſymptoms ſuppoſed to belong to what has been called the *Pleuritis vera.*

342. Some phyſicians have imagined, that there is a caſe of pneumonic inflammation particularly entitled to the appellation of *Peripneumony ;* and that is, the caſe of an inflammation beginning in the parenchyma, or cellular texture of the lungs, and having its ſeat chiefly there. But it ſeems to me very doubtful, if any acute inflammation of the lungs, or any diſeaſe

which has been called Peripneumony, be of that kind. It ſeems probable, that every acute inflammation begins in membranous parts; and, in every diſſection of perſons dead of peripneumony, the external membrane of the lungs, or ſome part of the pleura, has appeared to have been conſiderably affected.

343. An inflammation of the pleura covering the upper ſurface of the diaphragm, has been diſtinguiſhed by the appellation of *Paraphrenitis*, as ſuppoſed to be attended with the peculiar ſymptoms of delirium, riſus ſardonicus, and other convulſive motions: But it is certain, that an inflammation of that portion of the pleura, and affecting alſo even the muſcular ſubſtance of the diaphragm, has often taken place without any of theſe ſymptoms; and I have not met with either diſſections, or any account of diſſections, which ſupport the opinion, that an inflammation of the pleura covering the diaphragm is attended with

delirium more commonly than any other pneumonic inflammation.

344. With reſpect to the ſeat of pneumonic inflammation, I muſt obſerve further, that, although it may ariſe and ſubſiſt chiefly in one part of the pleura only, it is however frequently communicated to other parts of the ſame, and commonly communicates a morbid affection through its whole extent.

345. The remote cauſe of pneumonic inflammation is, commonly, cold applied to the body, obſtructing perſpiration, and determining to the lungs; while, at the ſame time, the lungs themſelves are expoſed to the action of cold. Theſe circumſtances operate eſpecially when an inflammatory diatheſis prevails in the ſyſtem; and, conſequently, upon perſons of the greateſt vigour; in cold climates; in the winter ſeaſon; and particularly in the ſpring, when viciſſitudes of heat and cold are frequent.

The diſeaſe, however, may ariſe in any ſeaſon when ſuch viciſſitudes occur.

Other remote cauſes alſo may have a ſhare in this matter; ſuch as, every means of obſtructing, ſtraining *, or otherwiſe injuring †, the pneumonic organs.

Pneumonic inflammation may happen to perſons of any age, but rarely to thoſe under the age of puberty; and moſt commonly it affects perſons ſomewhat advanced in life, as thoſe between forty-five and ſixty

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[*] Violent exertions in ſpeaking, ſinging, playing on wind inſtruments, running up hill, or in ſhort any exerciſe that increaſes the action of the lungs.

[†] Receiving noxious vapours into the lungs is ſometimes the cauſe of pneumonic inflammation; eſpecially corroſive or other acrid poiſonous vapours, as the fumes of arſenic, of ſulphur, of the muriatic acid, and ſimilar cauſtic and deſtructive exhalations. Chemiſts, therefore, in making experiments, or artiſts who work on ſubſtances yielding ſuch vapours, ſhould be careful to avoid them.

ſitxy years; thoſe, too, eſpecially of a robuſt and full habit.

The pneumonic inflammation has been ſometimes ſo much an epidemic, as to occaſion a ſuſpicion of its depending upon a ſpecific contagion; but I have not met with any evidence in proof of this.——See Morgagni de cauſis et ſedibus morborum, epiſt. xxi. art. 26.

346. The pneumonic, like other inflammations, may terminate by reſolution, ſuppuration, or gangrene; but it has alſo a termination peculiar to itſelf, as has been hinted above, (259.); and that is, when it is attended with an effuſion of blood into the cellular texture of the lungs, which ſoon interrupting the circulation of the blood through this viſcus, produces a fatal ſuffocation. This, indeed, ſeems to be the moſt common termination of pneumonic inflammation, when it ends fatally; for, upon the diſſection of almoſt every perſon

dead of the diſeaſe, it has appeared that ſuch an effuſion had happened.

347. From theſe diſſections alſo we learn, that pneumonic inflammation commonly produces an exudation from the internal ſurface of the pleura ; which appears partly as a ſoft viſcid cruſt, often of a compact, membranous form, covering every where the ſurface of the pleura, and particularly thoſe parts where the lungs adhere to the pleura coſtalis, or mediaſtinum ; and this cruſt ſeems always to be the cement of ſuch adheſions.

The ſame exudation ſhows itſelf alſo by a quantity of a ſerous whitiſh fluid, commonly found in the cavity of the thorax ; and ſome exudation or effuſion is uſually found to have been made likewiſe into the cavity of the pericardium.

348. It ſeems probable, too, that a like effuſion is ſometimes made into the cavity

of the bronchiæ: For, in ſome perſons who have died after labouring under a pneumonic inflammation for a few days only, the bronchiæ have been found filled with a conſiderable quantity of a ſerous and thickiſh fluid; which, I think, muſt be conſidered rather as the effuſion mentioned, having had its thinner parts taken off by reſpiration, than as a pus ſo ſuddenly formed in the inflamed part.

349. It is, however, not improbable, that this effuſion, as well as that made into the cavities of the thorax and pericardium, may be a matter of the ſame kind with that which, in other inflammations, is poured into the cellular texture of the parts inflamed, and there converted into pus; but, in the thorax and pericardium, it does not always aſſume that appearance, becauſe the cruſt covering the ſurface prevents the abſorption of the thinner part. This abſorption, however, may be compenſated in the bronchiæ by the drying power of the

air ; and therefore the effuſion into them may put on a more purulent appearance.

In many caſes of pneumonic inflammation, when the SPUTA are very copious, it is difficult to ſuppoſe that the whole of them proceed from the mucous follicles of the bronchiæ. It ſeems more probable that a great part of them may proceed from the effuſed ſerous fluid we have been mentioning ; and this, too, will account for the ſputa being ſo often of a purulent appearance. Perhaps the ſame thing may account for that purulent expectoration, as well as that purulent matter found in the bronchiæ, which the learned Mr de Haen ſays he had often obſerved, when there was no ulceration of the lungs : And this explanation is at leaſt more probable than Mr de Haen's ſuppoſition of a pus formed in the circulating blood.

350. To conclude this ſubject, it would appear that the effuſion into the bronchiæ,

which we have mentioned, often occurs with the effuſion of red blood in occaſioning the ſuffocation, which fatally terminates pneumonic inflammation; that the effuſion of ſerum alone may have this effect; and that the ſerum poured out in a certain quantity, rather than any debility in the powers of expectoration, is the cauſe of that ceaſing of expectoration which very conſtantly precedes the fatal event. For, in many caſes, the expectoration has ceaſed, when no other ſymptoms of debility have appeared, and when, upon diſſection, the bronchiæ have been found full of liquid matter. Nay, it is even probable, that, in ſome caſes, ſuch an effuſion may take place, without any ſymptoms of violent inflammation; and, in other caſes, the effuſion taking place may ſeem to remove the ſymptoms of inflammation which had appeared before, and thus account for thoſe unexpected fatal terminations which have ſometimes happened. Poſſibly this effuſion may account alſo for many of the phenomena of the Peripneumonia Notha.

351. Pneumonic inflammation ſeldom terminates by reſolution, without being attended with ſome evident evacuation. An haemorrhagy from the noſe happening upon ſome of the firſt days of the diſeaſe, has ſometimes put an end to it; and it is ſaid, that an evacuation from the hemorrhoidal veins, a bilious evacuation by ſtool, and an evacuation of urine with a copious ſediment, have ſeverally had the ſame effect: But ſuch occurrences have been rare and unuſual.

The evacuation moſt frequently attending, and ſeeming to have the greateſt effect in promoting reſolution, is an expectoration of a thick white or yellowiſh matter, a little ſtreaked with blood, copious, and brought up without either much or violent coughing.

Very frequently the reſolution of this

diſeaſe is attended with, and perhaps produced by, a ſweat, which is warm, fluid, copious over the whole body, and attended with an abatement of the frequency of the pulſe, of the heat of the body, and of other febrile ſymptoms.

352. The prognoſtics in this diſeaſe are formed from obſerving the ſtate of the principal ſymptoms.

A violent pyrexia is always dangerous.

The danger, however, is chiefly denoted by the difficulty of breathing. When the patient can lie on one ſide only; when he can lie on neither ſide, but upon his back only; when he cannot breathe with tolerable eaſe, except the trunk of his body be erect; when, even in this poſture, the breathing is very difficult, and attended with a turgeſcence and fluſhing of the face, together with partial ſweats about the head and neck, and an irregular pulſe; theſe circumſtances mark the difficulty of breathing in progreſſive degrees, and conſequently, in proportion, the danger of the diſeaſe.

A frequent violent cough aggravating the pain is always the ſymptom of an obſtinate diſeaſe.

As I apprehend that the diſeaſe is hardly ever reſolved without ſome expectoration, ſo a dry cough muſt be always an unfavourable ſymptom.

As the expectoration formerly deſcribed marks that the diſeaſe is proceeding to a reſolution; ſo an expectoration which has not the conditions there mentioned muſt denote at leaſt a doubtful ſtate of the diſeaſe; but the marks taken from the colour of the matter are for the moſt part fallacious.

An acute pain, very much interrupting inſpiration, is always the mark of a violent diſeaſe; though not of one more dangerous than an obtuſe pain, attended with very difficult reſpiration.

When the pains, which at firſt had affected one ſide only, have afterwards ſpread into the other; or when, leaving the ſide firſt affected, they entirely paſs into the other, theſe are always marks of an increaſing, and therefore of a dangerous, diſeaſe.

A delirium coming on during a pneumonic inflammation, is conſtantly a ſymptom denoting much danger.

353. When the termination of this diſeaſe proves fatal, it is on one or other of the days of the firſt week, from the third to the ſeventh. This is the moſt common caſe; but, in a few inſtances, death has happened at a later period of the diſeaſe.

When the diſeaſe is violent, but admitting of reſolution, this alſo happens frequently in the courſe of the firſt week; but, in a more moderate ſtate of the diſeaſe, the reſolution is often delayed to the ſecond week.

The diſeaſe, on ſome of the days from the third to the ſeventh, generally ſuffers a remiſſion; which, however, may be often fallacious, as the diſeaſe does ſometimes return again with as much violence as before, and then with great danger.

Sometimes the diſeaſe diſappears on the ſecond or third day, while an eryſipelas makes its appearance on ſome external part; and, if this continue fixed, the pneumonic inflammation does not recur.

354. Pneumonia, like other inflammations, often ends in ſuppuration or gangrene *.

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* As this termination of Pneumonia is always fatal, it is highly neceſſary that the phyſician ſhould be able to know when a gangrene is to be ſuſpected, that he may take the proper means for preventing it; or, when it is abſolutely formed, that he may ſave his reputation, by informing the patient's relations of the impending danger, and the fatal conſequences with which ſuch a termination is attended: I ſhall therefore add

355. When a pneumonia, with ſymptoms neither very violent nor very ſlight, has continued

ſome of the more remarkable diagnoſtics of an incipient gangrene in this diſeaſe.

A purulent ſpitting, ſtreaked with deep coloured blood, or with a blackiſh matter; a fetid breath; a rattling in the throat; a dejected countenance; a dim eye; a languid quick pulſe; the blood drawn from a vein void of the inflammatory cruſt; fetid green ſtools in abundance; urine of a bright flame colour, or depoſiting a black ſediment of a ſcaly appearance.

More ſymptoms of this fatal termination are unneceſſary; for, if moſt of thoſe above mentioned be preſent, the phyſician has no other duty to perform than warn the friends of the patient that death may be ſoon expected.

It may be farther remarked, that, when a gangrene is begun, the patient is conſiderably freed from pain, and both himſelf and his attendants have great hopes of his recovering; a few hours, however, ſoon undeceives them, and raiſes the reputation of the phyſician, who has pronounced a true prognoſis.

See ſome other diagnoſtics of gangrene in the notes on Article 359.

continued for many days, it is to be feared it will end in a ſuppuration. This, however, is not to be determined preciſely by the number of days: For, not only after the fourth, but even after the tenth day, there have been examples of a pneumonia ending by a reſolution; and, if the diſeaſe has ſuffered ſome intermiſſion, and again recurred, there may be inſtances of a reſolution happening at a much later period from the beginning of the diſeaſe, than that juſt now mentioned.

356. But, if a moderate diſeaſe, in ſpite of proper remedies employed, be protracted to the fourteenth day without any conſiderable remiſſion, a ſuppuration is pretty certainly to be expected; and it will be ſtill more certain, if no ſigns of reſolution have appeared, or if an expectoration which had appeared ſhall have again ceaſed, and the difficulty of breathing has continued or increaſed, while the other ſymptoms have rather abated.

357. That, in a pneumonia, the effuſion is made, which may lay the foundation of a ſuppuration, we conclude from the difficulty of breathing becoming greater when the patient is in a horizontal poſture *, or when he can lie more eaſily upon the affected ſide.

358. That, in ſuch caſes, a ſuppuration has actually begun, may be concluded from the patient's being frequently affected with ſlight cold ſhiverings, and with a ſenſe of cold felt ſometimes in one and ſometimes in another part of the body. We form the ſame concluſion alſo from the ſtate of the pulſe, which is commonly leſs frequent and ſofter, but ſometimes quicker and fuller, than before.

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* In all Pneumonic affections, the breathing is generally more difficult when the patient lies in an horizontal poſture; it cannot therefore be admitted as a diagnoſtic of an effuſion.

359. That a ſuppuration is already formed, may be inferred from there being a conſiderable remiſſion * of the pain which had before ſubſiſted, while, alongſt with this, the cough, and eſpecially the dyſpnœa, continue, and are rather augmented. At the ſame time, the frequency of the pulſe is rather increaſed †; the feveriſh ſtate ſuffers conſiderable exacerbations every evening,

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* The young phyſician muſt be on his guard with reſpect to this ſymptom; for it is alſo a ſymptom of an incipient, or an already formed gangrene; he ought therefore to be peculiarly attentive to the concomitant ſymptoms which the author enumerates, viz. the continuance or augmentation of the difficulty of breathing and the cough, both of which either totally diſappear, or are conſiderably leſſened on the ſupervention of gangrene.

† The increaſed frequency of the pulſe is alſo a ſymptom of a gangrene being formed; but, if that increaſed frequency be attended with febrile exacerbations in the evenings, then and then only can the phyſician be ſure that the diſeaſe has terminated in ſuppuration, and not in gangrene.

ing, and by degrees a hectic, in all its circumſtances, comes to be formed.

360. The termination of Pneumonia by gangrene is much more rare than has been imagined; and, when it does occur, it is uſually joined with the termination by effuſion (346.); and the ſymptoms of the one are hardly to be diſtinguiſhed from thoſe of the other.

361. The cure of pneumonic inflammation muſt proceed upon the general plan (264.); but the importance of the part affected, and the danger to which it is expoſed, require that the remedies be fully, as well as early, employed.

362. The remedy chiefly to be depended upon, is that of bleeding at the arm; which will be performed with moſt advantage in the arm of the ſide affected, but may be done in either arm, as may be moſt convenient for the patient or the ſurgeon.

The quantity drawn muſt be ſuited to the violence of the diſeaſe, and to the vigour of the patient ; and generally ought to be as large as this laſt circumſtance will allow. The remiſſion of pain, and the relief of reſpiration, during the flowing of the blood, may limit the quantity to be then drawn ; but, if theſe ſymptoms of relief do not appear, the bleeding ſhould be continued till the ſymptoms of a beginning ſyncope come on. It is ſeldom that one bleeding however large, will prove a cure of this diſeaſe ; and, although the pain and difficulty of breathing may be much relieved by the firſt bleeding, theſe ſymptoms commonly, and after no long interval, recur ; often with as much violence as before In the event of ſuch recurrence, the bleeding is to be repeated, even in the courſe of the ſame day, and perhaps to the ſame quantity as before.

Sometimes the ſecond bleeding may be larger than the firſt. There are perſons, who, by their conſtitution, are ready to faint even upon a ſmall bleeding; and, in ſuch perſons, this may prevent the drawing ſo much blood at firſt as a pneumonic inflammation might require; but, as the ſame perſons are frequently found to bear after-bleedings better than the firſt, this allows the ſecond and ſubſequent bleedings to be larger, and to ſuch a quantity as the ſymptoms of the diſeaſe may ſeem to demand.

363. It is according to the ſtate of the ſymptoms that bleedings are to be repeated; and they will be more effectual when practiſed in the courſe of the firſt three days than afterwards; but they are not to be omitted, although four days of the diſeaſe may have already elapſed. If the phyſician ſhall not have been called in ſooner; or if the bleedings practiſed during the firſt days ſhall not have been large enough, or even although theſe bleedings ſhall have procured ſome remiſſion; yet,

upon the recurrence of the urgent ſymptoms, the bleeding ſhould be repeated at any period of the diſeaſe, eſpecially within the firſt fortnight; and even afterwards, if a tendency to ſuppuration be not evident, or if, after a ſeeming ſolution, the diſeaſe ſhall have again returned.

364. With reſpect to the quantity of blood which ought, or which with ſafety may be taken away, no general rules can be delivered, as it muſt be very different, according to the ſtate of the diſeaſe, and the conſtitution of the patient. In an adult male of tolerable ſtrength, a pound of blood avoirdupois is a full bleeding. Any quantity above twenty ounces is a large, and any quantity below twelve a ſmall, bleeding. A quantity of from four to five pounds, in the courſe of two or three days, is generally as much as ſuch patients will ſafely bear; but, if the intervals between the bleedings and the whole of the time during which the bleedings have been em-

ployed have been long, the quantity taken upon the whole may be greater *.

365.

With reſpect to the quantity of blood to be drawn at once, or in the whole courſe of the diſeaſe, no general directions can be given; it muſt depend entirely on the circumſtances of the diſeaſe and of the patient. In general, it is uſual to continue the diſcharge until the patient can either breathe more freely, or feels a conſiderable abatement of the pain. If, however, the pain does not abate while the blood continues to flow, but ſigns of fainting appear, the blood muſt then be immediately ſtopped.

If the pain and other ſymptoms continue violent, or return after the firſt bleeding, it will then be neceſſary to have recourſe to the operation; and it muſt be repeated frequently through the courſe of the diſeaſe; avoiding, however, ſo large an evacuation at once as may induce fainting. The reaſon of this precaution is

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* Bleedings produce the beſt effect when the blood is drawn off as quickly as poſſible in a large full ſtream; and, in order to prevent ſyncope, the patient ought to be laid horizontally, or even with his head lower than his trunk.

365. When a large quantity of blood has been already taken from the arm, and when it is doubtful if more can with ſafety be drawn in that manner, ſome blood may ſtill be taken by cupping and ſcarifying. Such a meaſure will be more particularly proper, when the continuance or recurrence of pain, rather than the difficulty of breathing, becomes the urgent ſymptom; and then the cupping and ſcarifying ſhould be made as near to the pained part as can conveniently be done.

366. An expectoration takes place ſometimes very early in this diſeaſe: But if, notwithſtanding that, the urgent ſymptoms ſhould ſtill continue, the expectoration muſt not ſuperſede the bleedings mentioned; and, during the firſt days of the diſeaſe,

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is evident, viz. that, while the motion of the heart is ſuſpended during fainting, the blood ſtagnates in the right ſide of the heart, and is afterwards thrown with greater impetuoſity through the lungs.

eaſe, its ſolution is not to be truſted to the expectoration alone. It is in a more advanced ſtage only, when the proper remedies have been before employed, and when the ſymptoms have ſuffered a conſiderable remiſſion, that the entire cure may be truſted to a copious and free expectoration.

367. During the firſt days of the diſeaſe, I have not found that bleeding ſtops expectoration. On the contrary, I have often obſerved bleeding promote it; and it is in a more advanced ſtage of the diſeaſe only, when the patient, by large evacuations and the continuance of the diſeaſe, has been already exhauſted, that bleeding ſeems to ſtop expectoration. It appears to me that even then bleeding does not ſtop expectoration ſo much by weakening the powers of expectoration, as by favouring the ſerous effuſion into the bronchiæ (348.), and thereby preventing it.

368. While the bleedings we have mentioned ſhall be employed, it will be neceſſary to employ alſo every part of the antiphlogiſtic regimen (130.—132.), and particularly to prevent the irritation which might ariſe from any increaſe of heat. For this purpoſe, it will be proper to keep the patient out of bed, while he can bear it eaſily; and, when he cannot, to cover him very lightly while he lies in bed. The temperature of his chamber ought not to exceed ſixty degrees of Fahrenheit's thermometer; and whether it may be at any time colder, I am uncertain.

369. Mild and diluent drinks, moderately tepid, at leaſt never cold, given by ſmall portions at a time, ought to be adminiſtered plentifully. Theſe drinks may be impregnated with vegetable acids *. They may be properly accompanied alſo with nitre,

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* See the note pag. 165.

nitre, or ſome other neutrals *; but theſe ſalts ſhould be given ſeparately from the drink †.

It has been alledged, that both acids and nitre are ready to excite coughing; and in ſome perſons they certainly have this effect; but, except in perſons of a peculiar habit, I have not found their effects in exciting cough ſo conſiderable or troubleſome as to prevent our ſeeking the advantages otherwiſe to be obtained from theſe medicines.

370. Some practitioners have doubted if purgatives can be ſafely employed in this diſeaſe;

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* See the note pag. 185.

† Theſe ſalts generally render the drink nauſeous; and, as plentiful dilution is abſolutely neceſſary in theſe caſes, ſo far from rendering the patient's common drink nauſeous, by impregnating it with ill flavoured medicines, we ought, by every poſſible means, to endeavour to make it as agreeable as we can, that he may be the more eaſily prevailed on to take it plentifully.

diſeaſe; and indeed a ſpontaneous diarrhoea occurring in the beginning of the diſeaſe has ſeldom proved uſeful: But I have found the moderate uſe of cooling laxatives * generally ſafe; and have always found it uſeful to keep the belly open by frequent emollient glyſters.

371. To excite full vomiting by emetics, I judge to be a dangerous practice in this diſeaſe: But I have found it uſeful to exhibit nauſeating doſes; and, in a ſomewhat advanced ſtate of the diſeaſe, I have found ſuch doſes prove the beſt means of promoting expectoration †.

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* The cooling laxatives are, ſalts, manna, &c.; but, in theſe caſes, three or four ounces of infuſum ſennæ, with half an ounce of Glauber's ſalt may be given without danger.

† The tartar emetic is the medicine generally employed for this purpoſe. The doſe of it in theſe caſes

372. Fomentations and poultices applied to the pained part have been recommended, and may be uſeful; but the application of them is often inconvenient, and may be entirely omitted for the ſake of the more effectual remedy, bliſtering *.

Very early in the diſeaſe, a bliſter ſhould be applied as near to the pained part as poſſible. But as, when the irritation of a bliſter is preſent, it renders bleeding leſs effectual;

muſt be very ſmall, and well diluted, as in the following formula:

℞. Antimon. tartariſat. gr. ii.
Aq. font. ℥viiſs.
Syr. papaveris rubr. ℥ſs.
M.

The doſe of this mixture ought not to exceed 3 table ſpoonfuls, when given with this intention.

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* The application of a bliſter to the part affected ought to be the firſt preſcription in all complaints of the thorax, except ſome remarkable or urgent cauſe forbid the practice, becauſe it is a moſt efficacious remedy, and is as neceſſary as bleeding.

effectual; ſo the application of the bliſter ſhould be delayed till a bleeding ſhall have been employed. If the diſeaſe be moderate, the bliſter may be applied immediately after the firſt bleeding; but, if the diſeaſe be violent, and it is preſumed that a ſecond bleeding may be neceſſary ſoon after the firſt, it will then be proper to delay the bliſter till after the ſecond bleeding, when it may be ſuppoſed that any farther bleeding may be poſtponed till the irritation ariſing from the bliſter ſhall have ceaſed. It may be frequently neceſſary in this diſeaſe to repeat the bliſtering: And, in that caſe, the plaſters ſhould always be applied ſomewhere on the thorax*; for, when applied to more diſtant parts, they have little effect. The keeping the bliſtered parts open, and making what is called a perpetual bliſter, has much leſs effect than a freſh bliſtering.

373.

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* They ought, however, to be applied as near to the pained part as poſſible.

373. As this diſeaſe often terminates by an expectoration, ſo, various means of promoting this have been propoſed: But none of them appear to be very effectual; and ſome of them, being acrid ſtimulant ſubſtances, cannot be very ſafe.

The gums uſually employed ſeem too heating: Squills ſeem to be leſs ſo; but they are not very powerful, and ſometimes inconvenient, by the conſtant nauſea they induce *.

The

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* All the liquid forms of ſquills which we have in the ſhops are nauſeating. Pills made of the dry powder, with any electuary or conſerve, or honey, is the form in which ſquills affect the ſtomach leaſt. The doſe is 4 or 5 grains of the dry powder; 10 grains generally, if not conſtantly, produce vomitings. To prevent the nauſeating effect of ſquills, the addition of ſome grateful aromatic is of material uſe. The pilulæ ſiliticæ of the Edinburgh Pharmacopœia is a good formula, except that the doſe of it muſt be large, in order to take a ſufficient quantity of the ſquills, ten grains of it, containing

The volatile alkali may be of ſervice as an expectorant; but it ſhould be reſerved for an advanced ſtate of the diſeaſe.

Mucilaginous and oily demulcents appear to be uſeful, by allaying that acrimony of the mucus which occaſions too frequent coughing; and which coughing prevents the ſtagnation and thickening of the mucus, and thereby its becoming mild.

The receiving into the lungs the ſteams of warm water impregnated with vinegar, has often proved uſeful in promoting expectoration *.

But

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ing only one grain of dry ſquills, ſuppoſing no ſyrup to be uſed in making the maſs. One convenience, indeed, attends this formula, viz. that we can give ſmall doſes with more preciſion than if we uſe the powder alone. The gum ammoniac is an expectorant; and therefore, when given along with the ſquills in theſe pills, may render a leſs doſe of the ſquills neceſſary. If the extract of liquorice be omitted, the proportion of the ſquills to the whole will be increaſed.

* Some practitioners propoſe the ſteam of vinegar alone;

But of all other remedies, the moſt powerful for this purpoſe, are antimonial medicines, given in nauſeating doſes, as in (179). Of theſe, however, I have not found the kermes mineral more efficacious than emetic tartar, or antimonial wine; and the doſe of the kermes is much more uncertain than that of the others.

374. Though a ſpontaneous ſweating often proves the criſis of this diſeaſe, it ought not to be excited by art, unleſs with much caution. At leaſt, I have not yet found it either ſo effectual or ſafe, as ſome writers have alledged. When, after ſome remiſſion of the ſymptoms, ſpontaneous ſweats of a proper kind ariſe, they may be encou-

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alone; but it proves in general too irritating. The ſame objection may be made againſt uſing the ſteam of wine, which ſome practitioners have recommended inſtead of the ſteam of vinegar. Plain water is the beſt, as the warm vapour only acts by relaxing the internal ſurface of the lungs.

encouraged; but it ought to be without much heat, and without ſtimulant medicines. If, however, the ſweats be partial and clammy only, and a great difficulty of breathing ſtill remain, it will be very dangerous to encourage them.

375. Phyſicians have differed much in opinion with regard to the uſe of opiates in pneumonic inflammation. To me it appears, that, in the beginning of the diſeaſe, and before bleeding and bliſtering have produced ſome remiſſion of the pain and of the difficulty of breathing, opiates have a very bad effect, by their increaſing the difficulty of breathing, and other inflammatory ſymptoms. But, in a more advanced ſtate of the diſeaſe, when the difficulty of breathing has abated, and when the urgent ſymptom is a cough, proving the chief cauſe of the continuance of the pain, and of the want of ſleep, opiates may be employed with great advantage and ſafety. The interruption of the expectoration,

which they ſeem to occaſion, is for a ſhort time only, and they ſeem often to promote it, as they occaſion a ſtagnation of what was by frequent coughing diſſipated inſenſibly, and therefore give the appearance of what Phyſicians have called Concocted Matter.

CHAP. VII.

OF THE

PERIPNEUMONIA NOTHA,

OR

BASTARD PERIPNEUMONY.

376. A Disease under this name is mentioned in ſome medical writings of the ſixteenth century; but it is very doubtful if the name was then applied to the ſame diſeaſe to which we now apply it. It appears to me, that, unleſs

ſome of the caſes deſcribed under the title of Catarrhus Suffocativus be ſuppoſed to have been of the kind I am now to treat of, there was no deſcription of this diſeaſe given before that by Sydenham, under the title I have employed here.

377. After Sydenham, Boerhaave was the firſt who in a ſyſtem took notice of it as a diſtinct diſeaſe; and he has deſcribed it in his aphoriſms, although with ſome circumſtances different from thoſe in the deſcription of Sydenham. Of late, Mr Lieutaud has with great confidence aſſerted, that Sydenham and Boerhaave had, under the ſame title, deſcribed different diſeaſes; and that, perhaps, neither of them had, on this ſubject, delivered any thing but hypotheſis.

378. Notwithſtanding this bold aſſertion, I am humbly of opinion, and the Baron Van Swieten ſeems to have been of the ſame, that Sydenham and Boerhaave did

deſcribe, under one and the ſame title, one and the ſame diſeaſe. Nay, I am further of opinion, that the diſeaſe deſcribed by Mr Lieutaud himſelf, is not eſſentially different from that deſcribed by both the other authors. Nor will the doubts of the very learned but modeſt Morgagni, on this ſubject, diſturb us, if we conſider that, while very few deſcribers of diſeaſes either have it in their power, or have been ſufficiently attentive in diſtinguiſhing between the eſſential and accidental ſymptoms of diſeaſe; ſo, in a diſeaſe which may have not only different, but a greater number of ſymptoms, in one perſon than it has in another, we need not wonder that the deſcriptions of the ſame diſeaſe by different perſons ſhould come out in ſome reſpects different. I ſhall, however, enter no farther into this controverſy, but endeavour to deſcribe the diſeaſe as it has appeared to myſelf; and, as I judge, in the eſſential ſymptoms, much the ſame as it has appeared to all the other authors mentioned.

379. This diſeaſe appears at the ſame ſeaſons that other pneumonic and catarrhal affections commonly do; that is, in autumn and in ſpring. Like theſe diſeaſes alſo, it is ſeemingly occaſioned by ſudden changes of the weather from heat to cold. It appears alſo, during the prevalence of contagious catarrhs; and it is frequently under the form of the Peripneumonia Notha that theſe catarrhs prove fatal to elderly perſons.

This diſeaſe moſt commonly attacks perſons ſomewhat advanced in life, eſpecially thoſe of a full phlegmatic habit; thoſe who have before been frequently liable to catarrhal affections; and thoſe who have been much addicted to the large uſe of fermented and ſpirituous liquors.

The diſeaſe commonly comes on with the ſame ſymptoms as other febrile diſeaſes; that is, with alternate chills and heats; and the ſymptoms of pyrexia are ſometimes ſufficiently evident; but in moſt caſes

ſes theſe are very moderate, and in ſome hardly at all appear. With the firſt attack of the diſeaſe, a cough comes on ; uſually accompanied with ſome expectoration, and, in many caſes, there is a frequent throwing up of a conſiderable quantity of a viſcid opaque mucus. The cough often becomes frequent and violent ; is ſometimes accompanied with a rending headach ; and, as in other caſes of cough, a vomiting is ſometimes excited by it. The face is ſometimes fluſhed ; and ſome giddineſs or drowſineſs often attends the diſeaſe. A difficulty of breathing, with a ſenſe of oppreſſion, or ſtraitening in the cheſt, with ſome obſcure pains there, and a ſenſe of laſſitude over the whole body, very conſtantly attend this diſeaſe. The blood drawn in this diſeaſe ſhows a buffy ſurface, as in other inflammatory affections.

The diſeaſe has often the appearance only of a more violent catarrh, and after the employment of ſome remedies is entirely relieved by a free and copious expectoration. In other caſes, however, the feveriſh and catarrhal ſymptoms are at firſt very moderate, and even ſlight; but, after a few days, theſe ſymptoms ſuddenly become conſiderable, and put an end to the patient's life when the indications of danger were before very little evident.

380. From the different circumſtances in which this diſeaſe appears, the pathology of it is difficult. It is certainly often no other at firſt than a catarrhal affection; which, in elderly perſons, is frequently attended with a large afflux of mucus to the lungs; and it was on this footing that Sydenham conſidered it as only differing in degree from his *Febris Hyemalis.* A catarrh, however, is ſtrictly an affection of the mucous membrane and follicles of the bronchiæ alone: But it may readily have, and frequently has, a degree of pneumonic inflammation joined to it; and in that caſe may prove more properly the peculiar diſ-

caſe we treat of here. But, further, as pneumonic inflammation very often produces an effuſion of ſerum into the bronchiæ (348.), ſo this, in elderly perſons, may occur in conſequence of a ſlight degree of inflammation; and, when it does happen, will give the exquiſite and fatal caſes of the peripneumonia notha.

381. After this attempt to eſtabliſh the pathology, the method of cure in the different circumſtances of the diſeaſe will not be difficult.

In caſe the fever, catarrhal and pneumonic ſymptoms are immediately conſiderable, a blood-letting will certainly be proper and neceſſary: But, where theſe ſymptoms are moderate, a blood-letting will hardly be requiſite; and, when an effuſion is to be feared, the repetition of blood-letting may prove extremely hurtful *.

In

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* The intention of bleeding in this diſeaſe is merely

In all caſes, the remedies chiefly to be depended upon are vomiting * and bliſtering †. Full vomiting may be frequently repeated; and nauſeating ‡ doſes ought to be conſtantly employed.

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to facilitate the circulation through the lungs, and to relieve the oppreſſion in the breaſt. When this intention is therefore anſwered, and when the ſhortneſs of breath and oppreſſion about the breaſt are removed, there is no farther need of the lancet.

As this diſeaſe chiefly attacks elderly perſons, and ſuch as are of a phlegmatic habit, much harm may be done by repeated bleedings, which always increaſe debility, and retard the cure.

[*] Vomiting in this diſeaſe has been thought by many practitioners to be a doubtful remedy. The action of vomiting always oppreſſes the breaſt, and ſometimes even increaſes the ſymptoms of the diſeaſe.

[†] This is the chief remedy; and the bliſters ought to be applied as near the part affected as poſſible.

[‡] In ſeveral of the former notes we have fully de-

Purging may perhaps be uſeful; but, as as it is ſeldom ſo in pneumonic affections, nothing but gentle laxatives are here neceſſary *.

In

ſcribed the method of giving the emetic tartar in nauſeating doſes. Their principal effect is to procure a perſpiration; and, when this effect is produced, the patient muſt drink largely of any diluent or attenuating liquor, as thin barley-water, with the addition of the juice of ſome of the acid fruits, or infuſions of ſome of the gentle aromatics, as ſage, balm, mint, &c. or even a thin wine whey,

* Purging is ſurely hurtful in this diſeaſe, by inducing too great a ſtate of debility; the inteſtines, however, are to be emptied in the beginning of the diſeaſe, which is beſt done by a purging glyſter, and kept open by the ſubſequent uſe of gentle laxatives, or by repetitions of mild emollient glyſters. The purging glyſter may be made as follows:

℞. Aq. font. ℔. i.
Fol. ſenn. ℥ſs.
Coque leniter, et colaturæ adde
Sal. cathart. amar. ℥i.
Mel. ℥ii.
M. f. Enema.

The

In all the circumſtances of this diſeaſe, the antiphlogiſtic regimen is proper: Cold is to be guarded againſt; but much external heat is to be carefully avoided.

382. If a perſon ſweats eaſily, and it can be brought out by the uſe of mild tepid liquors only, the practice may in ſuch perſons be tried. See MORGAGNI *De Sed. et Cauſ.* Epiſt. xiii. Art. 4.

383. I might here, perhaps, give a ſeparate ſection on the Carditis and Pericarditis, or the inflammations of the heart and Pericardium; but they ſcarcely require a particular

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The ſubſequent glyſters ought to conſiſt of nothing more than ſimple barley water, or milk and water. The laxatives, if they are uſed, ſhould be very gentle and mild; as cream of tartar whey, manna, tamarinds, &c. Half an ounce of manna diſſolved in half a pint of cream of tartar whey, makes an agreeable opening mixture; half a tea-cupful of it may be taken three or four times a day, ſo as to procure at leaſt two or three ſtools in the twenty-four hours.

particular conſideration. An acute inflammation of the pericardium is almoſt always a part of the ſame pneumonic affection I have been treating of; and is not always diſtinguiſhed by any different ſymptoms; or, if it be, does not require any different treatment. The ſame may be ſaid of an acute inflammation of the heart itſelf; and, when it happens that the one or other is diſcovered by the ſymptoms of palpitation or ſyncope, no more will be implied than that the remedies of pneumonic inflammation ſhould be employed with greater diligence.

From diſſections, which ſhow the heart and pericardium affected with eroſions, ulcerations, and abſceſſes, we diſcover, that theſe parts had been before affected with inflammation; and that in caſes where no ſymptoms of pneumonic inflammation had appeared: It may therefore be alledged, that thoſe inflammations of the heart and pericardium ſhould be conſidered as diſeaſes independent of the pneumonic. This indeed is juſt: But the hiſtory of ſuch caſes proves, that thoſe inflammations had been of a chronic kind, and hardly diſcovering themſelves by any peculiar ſymptoms; or, if attended with ſymptoms marking an affection of the heart, theſe were, however, ſuch as have been known frequently to ariſe from other cauſes than inflammation. There is, therefore, upon the whole, no room for our treating more particularly of the inflammation of the heart or pericardium.

CHAP. VIII.

OF THE GASTRITIS, OR INFLAMMATION OF THE STOMACH.

384. AMONG the inflammations of the abdominal region, I have given a place in our Noſology to the Peritonitis; comprehending under that title, not only the inflammations affecting the peritonæum lining the cavity of the abdomen, but alſo thoſe affecting the extenſions of this membrane in the omentum and meſentery. It is not, however, propoſed to treat of them

here, becauſe it is very difficult to ſay by what ſymptoms they are always to be known; and farther, becauſe, when known, they do not require any remedies beſide thoſe of inflammation in general. I proceed, therefore, to treat of thoſe inflammations which, affecting viſcera of peculiar functions, both give occaſion to peculiar ſymptoms, and require ſome peculiarities in the method of cure: and I ſhall begin with the inflammation of the ſtomach.

385. The inflammation of the ſtomach is of two kinds, Phlegmonic, or Erythematic *. The firſt may be ſeated in what is called the Nervous Coat of the ſtomach, or in the peritonæum inveſting it. The ſecond is always ſeated in the villous coat and cellular texture immediately ſubjacent.

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* This is a new term; but whoever conſiders what is ſaid in 274. will, I expect, perceive the propriety, and even the neceſſity, of it.—Author.

386. The phlegmonic inflammation of the ſtomach, or what has been commonly treated under the title of Gaſtritis, is known by an acute pain in ſome part of the region of the ſtomach, attended with pyrexia, with frequent vomiting, eſpecially upon occaſion of any thing being taken down into the ſtomach, and frequently with hickup. The pulſe is commonly ſmall and hard; and there is a greater loſs of ſtrength in all the functions of the body, than in the caſe of almoſt any other inflammation.

387. This inflammation may be produced by various cauſes, as, by external contuſion; by acrids of various kinds taken into the ſtomach; frequently by very cold drink taken into it while the body is very warm; and ſometimes by over-diſtenſion, from the having taken in a large quantity of food of difficult digeſtion. All theſe may be conſidered as external cauſes; but the diſeaſe ſometimes ariſes alſo from internal cauſes not ſo well underſtood. It may

ariſe from inflammations of the neighbouring parts communicated to the ſtomach, and is then to be conſidered as a ſymptomatic affection only. It may ariſe alſo from various acrimonies generated within the body, either in the ſtomach itſelf, or in other parts, and poured into the cavity of the ſtomach. Theſe are cauſes more directly applied to the ſtomach; but there are perhaps others originating elſewhere, and affecting the ſtomach only ſympathetically. Such may be ſuppoſed to have acted in the caſe of putrid fevers and exanthematic pyrexiæ; in which, upon diſſection, it has been diſcovered that the ſtomach had been affected with inflammation.

388. From the ſenſibility of the ſtomach, and its communication with the reſt of the ſyſtem, it will be obvious, that the inflammation of this organ, by whatever cauſes produced, may be attended with fatal conſequences. In particular, by the great debility which ſuch an inflammation ſuddenly

ly produces, it may quickly prove fatal, without running the common courſe of inflammations.

When it laſts long enough to follow the ordinary courſe of other inflammations, it may terminate by reſolution, gangrene, or ſuppuration. The ſchirrhoſities which are often diſcovered affecting the ſtomach, are ſeldom known to be the conſequences of inflammation.

389. The tendency of this diſeaſe to admit of reſolution, may be known by its having ariſen from no violent cauſe; by the moderate ſtate of the ſymptoms, and by a gradual remiſſion of theſe, eſpecially in conſequence of remedies employed in the courſe of the firſt, or at fartheſt the ſecond, week of the diſeaſe.

390. The tendency to ſuppuration may be known by the ſymptoms continuing, in a moderate degree, for more than one or two weeks; and likewiſe by a conſiderable

remiſſion of the pain, while a ſenſe of weight and an anxiety ſtill remain.

When an abſceſs has been formed, the frequency of the pulſe is at firſt abated; but ſoon after, it is again increaſed, with frequent cold ſhiverings, and with marked exacerbations in the afternoon and evening, followed by night-ſweatings, and other ſymptoms of hectic fever. Theſe at length prove fatal, unleſs the abſceſs open into the cavity of the ſtomach, the pus be evacuated by vomiting, and the ulcer ſoon heal.

391. The tendency to gangrene may be ſuſpected from the violence of the ſymptoms not yielding to the remedies employed during the firſt days of the diſeaſe: and that a gangrene has already begun, may be known from the ſudden remiſſion of the pain, while the frequency of the pulſe continues, and at the ſame time becomes weaker, accompanied with other marks [*] of an increaſing debility in the whole ſyſtem.

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[*] A delirium is one of the moſt general concomi-

392 From the diſſection of dead bodies it appears, that the ſtomach very often has been affected with inflammation, when the characteriſtic ſymptoms of it (386.) had not appeared; and therefore it is very difficult to lay down any general rules for the cure of this diſeaſe.

393. It is only in the caſe of phlegmonic inflammation, as characteriſed in 386, that we can adviſe the cure or reſolution to be attempted by large and repeated bleedings employed early in the diſeaſe; and we are not to be deterred from theſe by the ſmallneſs of the pulſe; for, after bleeding, it commonly becomes fuller and ſofter. After bleeding, a bliſter ought to be applied to the region of the ſtomach; and the cure will be aſſiſted by fomentations of the whole abdomen, as well as by frequent emollient and laxative glyſters.

394.

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tants of the increaſing debility of the ſyſtem, and may be conſidered as a diagnoſtic.

394. In this diſeaſe, the irritability of the ſtomach will not admit of any medicines being thrown into it; and, if any internal medicines can be ſuppoſed neceſſary, they muſt be exhibited in glyſters. The giving of drink may be tried; but it ought to be of the very mildeſt kind, and in very ſmall quantities at a time *.

395. Opiates, in whatever manner exhibited, are very hurtful during the firſt days of the diſeaſe; but when its violence ſhall have abated, and when the violence of the pain and vomiting recur at intervals only, opiates given in glyſters may be cautiouſly tried, and ſometimes have been employed with advantage.

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* Chicken broth is extremely mild; it may be taken in ſmall quantities, with about eight or ten grains of nitre in every pint of it. Lintſeed tea is alſo a very mild drink; and, if the inflammation be owing to the preſence of any acrid matter irritating the ſtomach, it is of great ſervice by its ſheathing quality.

396. A tendency to ſuppuration, in this diſeaſe, is to be obviated by the means juſt now propoſed. After a certain duration of the diſeaſe, it cannot be prevented by any means whatever; and, when actually begun, muſt be left to nature; the buſineſs of the phyſician being only to avoid all irritation.

397. A tendency to gangrene can be obviated in no other way than by the means ſuggeſted 393. employed early in the diſeaſe; and, when it does actually ſupervene, admits of no remedy.

398. Erythematic inflammations of the ſtomach, are more frequent than thoſe of the phlegmonic kind. It appears, at leaſt, from diſſections, that the ſtomach has often been affected with inflammation, when neither pain nor pyrexia had before given any notice of it; and ſuch inflammation I apprehend to have been chiefly of the erythematic kind. This ſpecies of inflammation

alſo, is eſpecially to be expected from acrimony of any kind thrown into the ſtomach; and would certainly occur more frequently from ſuch a cauſe, were not the interior ſurface of this organ commonly defended by mucus exuding in large quantity from the numerous follicles placed immediately under the villous coat. Upon many occaſions, however, the exudation of mucus is prevented, or the liquid poured out is of a leſs viſcid kind, ſo as to be leſs fitted to defend the ſubjacent nerves; and it is in ſuch caſes that matters even of moderate acrimony, may produce an erythematic affection of the ſtomach.

399. From what has been ſaid, it muſt appear that an erythematic inflammation of the ſtomach may frequently occur; but will not always diſcover itſelf, as it ſometimes takes place without pyrexia, pain, or vomiting.

400. There are caſes, however, in which it may be diſcovered. The affection of the ſtomach ſometimes ſpreads into the œſophagus, and appears in the pharynx, as well as on the whole internal ſurface of the mouth. When, therefore, an erythematic inflammation affects the mouth and fauces, and when at the ſame time there ſhall be in the ſtomach an unuſual ſenſibility to all acrids, with a frequent vomiting, there can be little doubt of the ſtomach being affected with the ſame inflammation that has appeared in the fauces. Even when no inflammation appears in the fauces, yet if ſome degree of pain be felt in the ſtomach, if there be a want of appetite, an anxiety, frequent vomiting, an unuſual ſenſibility with reſpect to acrids, ſome thirſt, and frequency of pulſe, there will then be room to ſuſpect an erythematic inflammation of the ſtomach; and we have known ſuch ſymptoms, after ſome time, diſcover their cauſe more clearly by the appearance of the inflammation in the fauces or mouth.

Erythematic inflammation is often diſpoſed to ſpread from one place to another on the ſame ſurface; and, in doing ſo, to leave the place it had firſt occupied. Thus, ſuch an inflammation has been known to ſpread ſucceſſively along the whole courſe of the alimentary canal, occaſioning in the inteſtines diarrhœa, and in the ſtomach vomitings; the diarrhœa ceaſing when the vomitings come on, or the vomitings upon the coming on of the diarrhœa.

401. When an erythematic inflammation of the ſtomach ſhall be diſcovered, it is to be treated differently, according to the difference of its cauſes and ſymptoms.

When it is owing to acrid matters taken in by the mouth, and when theſe may be ſuppoſed ſtill preſent in the ſtomach, they are to be waſhed out by throwing in a large quantity of warm and mild liquids, and by exciting vomiting. At the ſame time, if the nature of the acrimony and its proper corrector be known, this ſhould be thrown in; or if a ſpecific corrector be not known, ſome general demulcents ſhould be employed.

402. Theſe meaſures, however, are more ſuited to prevent the inflammation, than to cure it after it has taken place. When this laſt may be ſuppoſed to be the caſe, if it be attended with a ſenſe of heat, with pain and pyrexia, according to the degree of theſe ſymptoms, the meaſures propoſed in 393. are to be more or leſs employed.

403. When an erythematic inflammation of the ſtomach has ariſen from internal cauſes, if pain and pyrexia accompany the diſeaſe, ſome bleeding, in perſons not otherwiſe weakened, may be employed: but, as the affection often ariſes in putrid diſeaſes, and in convaleſcents from fever, ſo, in theſe caſes, bleeding is inadmiſſible; all that can be done being to avoid irritation, and to throw into the ſtomach what quantity

ſity of acids, and of aceſcent aliments, it ſhall be found to bear.

In ſome conditions of the body, in which this diſeaſe ariſes, the Peruvian bark and bitters may ſeem to be indicated; but an erythematic ſtate of the ſtomach does not commonly allow of them.

CHAP. IX.

OF THE

ENTERITIS,

OR

INFLAMMATION OF THE INTESTINES.

404. THE inflammation of the inteſtines, like that of the ſtomach, may be either phlegmonic, or erythematic: But, on the ſubject of the latter, I have nothing to add to what has been ſaid in the laſt chapter; and ſhall here therefore treat of the phlegmonic inflammation only.

406 *. This inflammation may be known to be preſent, by a fixed pain of the abdomen, attended with pyrexia, coſtiveneſs, and vomiting. Practical writers mention the pain in this caſe as felt in different parts of the abdomen, according to the different ſeat of the inflammation; and ſo, indeed, it ſometimes happens; but very often the pain ſpreads over the whole belly, and is felt more eſpecially about the navel.

407. The Enteritis and Gaſtritis ariſe from like cauſes; but the former, more readily than the latter, proceeds from cold applied to the lower extremities, or to the belly itſelf. The enteritis has likewiſe its own peculiar cauſes, as ſupervening upon the ſpaſmodic colic, incarcerated hernia, and volvulus.

408. Inflammations of the inteſtines have the ſame terminations as thoſe of the ſtomach; and, in both caſes, the ſeveral ten-

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* The articles were thus numbered in the laſt edition.

tendencies are to be diſcovered by the ſame ſymptoms (389.—391.).

409. The cure of the enteritis is, in general, the ſame with that of the gaſtritis (393. et ſeq.); but, in the enteritis, there is commonly more acceſs to the introduction of liquids, of acid, aceſcent, and other cooling remedies, and even of laxatives *. As, however,

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* In this diſeaſe, we ought to be extremely cautious in the adminiſtration either of medicines or diluents. The reaſon is evident from the following conſiderations. In every caſe of inflammation of a canal, the bore of that canal is diminiſhed, and frequently quite ſhut. A quantity of any kind of ingeſta being forced againſt this obſtruction, muſt neceſſarily increaſe the irritation, and conſequently aggravate all the ſymptoms. The ſame reaſon may be given for the caution neceſſary in preſcribing laxatives, which always irritate; for their action generally depends upon the irritation they produce.

Large bleedings, emollient glyſters frequently repeated, however, a vomiting ſo frequently attends this diſeaſe, care muſt be taken not to excite

peated, fomentations, the warm bath, and ſmall anodyne glyſters occaſionally injected, are the moſt effectual remedies in the firſt ſtage of this violent diſeaſe.

When the pain remits, and the violence of the ſymptoms abates, mild diluents may then be admitted, as chicken broth, thin lintſeed tea, &c.; and, if ſuch liquors be retained without aggravating the ſymptoms, we may then venture to give an ounce of manna every three or four hours, till it procures a paſſage.

The internal uſe of opium has been extolled by ſeveral practitioners in theſe caſes; but experience ſhews that it generally does harm in every caſe of inflammation, eſpecially in the early ſtages of it.

The anodyne glyſter is the ſafeſt method of uſing opium; but glyſters of this kind are ſaid to obſtruct: This objection is, however, ill founded; for, by diminiſhing the irritation, they evidently tend to reſolve the inflammation. The following formula of an anodyne glyſter is generally uſed:

℞.

cite that vomiting by either the quantity or the quality of any thing thrown into the ſtomach.

The ſame obſervation, with reſpect to the uſe of opiates, is to be made here as in the caſe of gaſtritis.

410. Under the title of Enteritis, it has been uſual with practical writers to treat of the remedies proper for the colic *, and its higher degree named *Ileus :* But, although it be true that the enteritis and colic do frequently accompany each other, I ſtill hold them

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℞. Decoct. hord. ℥iv.
Opii puri gr. iv.
M.

In theſe glyſters, particular care muſt be taken to avoid every thing that has the leaſt tendency to irritate.

If a gangrene be formed before the phyſician be called, as is too frequently the caſe, then all remedies are in vain.

* See Art. 435.

them to be diſtinct diſeaſes, to be often occurring ſeparately, and accordingly to require and admit of different remedies. I ſhall therefore delay ſpeaking of the remedies proper for the colic, till I ſhall come to treat of this diſeaſe in its proper place.

What might be mentioned with reſpect to the ſuppuration or gangrene occurring in the enteritis, may be ſufficiently underſtood from what has been ſaid on the ſame ſubject with reſpect to the gaſtritis.

CHAP.

CHAP. X.

OF THE

HEPATITIS,

OR

INFLAMMATION OF THE LIVER.

412. THE inflammation of the liver ſeems to be of two kinds; the one acute, the other chronic.

413. The acute is attended with pungent pain; conſiderable pyrexia; a frequent,

quent, ſtrong, and hard pulſe; and high-coloured urine.

414. The chronic hepatitis very often does not exhibit any of theſe ſymptoms; and it is only diſcovered to have happened, by our finding in the liver, upon diſſection, large abſceſſes, which were preſumed to be the effect of ſome degree of previous inflammation. As this chronic inflammation is ſeldom to be certainly known, and therefore does not lead to any determined practice, we omit treating of it here, and ſhall only treat of what relates to the acute ſpecies of the hepatitis *.

415. The acute hepatitis may be known by a pain more or leſs acute in the right hypochondrium, increaſed by preſſing upon the part. The pain is very often in ſuch a part of the ſide as to make it appear like

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* It is doubtful whether this chronic hepatitis ever exiſts.

like that of a pleuriſy; and frequently, like that, too, is increaſed on reſpiration. The diſeaſe is, in ſome inſtances, alſo attended with a cough, which is commonly dry, but ſometimes humid; and, when the pain thus reſembles that of a pleuriſy, the patient cannot lie eaſily except upon the ſide affected.

In every kind of acute hepatitis, the pain is often extended to the clavicle, and to the top of the ſhoulder. The diſeaſe is attended ſometimes with hickup, and ſometimes with vomiting. Many practical writers have mentioned the jaundice, or a yellow colour of the ſkin and eyes, as a very conſtant ſymptom of the hepatitis; but experience has ſhown, that it may often occur without any ſuch ſymptom *.

416.

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* This ſymptom generally appears, however, after the diſeaſe has continued for three or four days; perhaps, indeed, it might have been preſent in the begin-

ning;

416. The remote cauſes of hepatitis are not always to be diſcerned, and many have been aſſigned on a very uncertain foundation. The following ſeem to be frequently evident. 1. External violence from contuſions or falls, and eſpecially thoſe which have occaſioned a fracture of the cranium. 2. Certain paſſions of the mind. 3. Violent ſummer-heats. 4. Violent exerciſe. 5. Intermittent and remittent fevers. 6. Cold applied externally, or internally; and therefore, in many caſes, the ſame cauſes which produce pneumonic inflammation, produce hepatitis, and whence alſo the two diſeaſes are ſometimes joined together. 7. Various ſolid concretions or collections of liquid matter, in the ſubſtance of the liver, produced by unknown cauſes. Laſtly, The acute is often induced by a chronic inflammation of this viſcus.

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ning, for it is frequently ſo ſlight as to eſcape obſervation.

417. It has been ſuppoſed that the hepatitis may be an affection either of the extremities of the hepatic artery, or of thoſe of the vena portarum; but of the laſt ſuppoſition there is neither evidence nor probability.

418. It ſeems probable, that the acute hepatitis is always an affection of the external membrane of the liver; and that the parenchymatic is of the chronic kind. The acute diſeaſe may be ſeated either on the convex or on the concave ſurface of the liver. In the former caſe, a more pungent pain and hickup may be produced, and the reſpiration is more conſiderably affected. In the latter, there occurs leſs pain, and a vomiting is produced, commonly by ſome inflammation communicated to the ſtomach. The inflammation of the concave ſurface of the liver, may be readily communicated to the gall-bladder and biliary ducts; and this perhaps is the only caſe of idiopathic hepatitis attended with jaundice.

419. The hepatitis, like other inflammations, may end by reſolution, ſuppuration, or gangrene; and the tendency to the one or the other of theſe events may be known from what has been delivered above.

420. The reſolution of hepatitis is often the conſequence of, or is attended with, evacuations of different kinds. A hemorrhagy, ſometimes from the right * noſtril, and ſometimes from the hemorrhoidal veſſels, gives a ſolution of the diſeaſe. Sometimes a bilious diarrhœa contributes to the ſame event; and the reſolution of the hepatitis, as of other inflammations, is attended with ſweating, and with an evacuation

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* And the left alſo. It was a fancy of Galen's that inflammatory fevers were only reſolved by ſuch hemorrhagies as flowed from the ſide affected: Thus, an hemorrhage from the right noſtril reſolved an inflammation of the liver; but a diſcharge from the left, an inflammation of the ſpleen.

tion of urine depoſiting a copious ſediment. Can this diſeaſe be reſolved by expectoration? It would ſeem to be ſometimes cured by an eryſipelas appearing in ſome external part.

321. When this diſeaſe has ended in ſuppuration, the pus collected may be diſcharged by the biliary ducts; or, if the ſuppurated part does not any where adhere cloſely to the neighbouring parts, the pus may be diſcharged into the cavity of the abdomen: But if, during the firſt ſtate of inflammation, the affected part of the liver ſhall have formed a cloſe adheſion to ſome of the neighbouring parts, the diſcharge of the pus after ſuppuration may be various, according to the different ſeat of the abſceſs. When ſeated on the convex part of the liver, if the adheſion be to the peritonæum lining the common teguments, the pus may make its way through theſe, and be diſcharged outwardly: Or, if the adheſion ſhould have been to the diaphragm,

the pus may penetrate through this, and into the cavity of the thorax, or of the lungs; and, through the latter may be diſcharged by coughing. When the abſceſs of the liver is ſeated on its concave part, then, in conſequence of adheſions, the pus may be diſcharged into the ſtomach or the inteſtines; and into theſe laſt, either directly, or by the intervention of the biliary ducts.

422. The prognoſtics in this diſeaſe are eſtabliſhed upon the general principles relating to inflammation, upon the particular circumſtances of the liver, and upon the particular ſtate of its inflammation.

The cure of this diſeaſe muſt proceed upon the general plan; by bleeding, more or leſs, according to the urgency of pain and pyrexia; by the application of bliſters; by fomentations of the external parts in the uſual manner, and of the internal parts by frequent emollient glyſters; by frequently opening the belly by means of gentle laxatives, and by diluent and refrigerant remedies.

423. Although, in many caſes, the chronic hepatitis does not clearly diſcover itſelf; yet, upon many occaſions, it may perhaps be diſcovered, or at leaſt ſuſpected, from thoſe cauſes which might affect the liver (316.) having been applied; from ſome fulneſs and ſome tenſeneſs of weight in the right hypochondrium; from ſome ſhooting pains at times felt in that region; from ſome uneaſineſs or pain felt upon preſſure in that part; from ſome uneaſineſs from lying upon the left ſide; and laſtly, from ſome degree of pyrexia, combined with more or fewer of theſe ſymptoms.

When from ſome of theſe circumſtances a chronic inflammation is to be ſuſpected, it is to be treated by the ſame remedies as in the laſt paragraph, employed more or leſs, as the degree of the ſeveral ſymptoms ſhall more diſtinctly indicate.

424.

424 When from either kind of inflammation a ſuppuration of the liver has been formed, and the abſceſs points outwardly, the part muſt be opened, the pus evacuated, and the ulcer healed, according to the ordinary rules for cleanſing and healing ſuch abſceſſes and ulcers.

425. I might here conſider the Splenitis, or inflammation of the ſpleen ; but it does not ſeem neceſſary, becauſe the diſeaſe very ſeldom occurs. When it does, it may be readily known by the character given in our Noſology ; and its various termination, as well as the practice which it requires, may be underſtood from what has been already ſaid with reſpect to the inflammations of the other abdominal viſcera.

CHAP.

CHAP. XI.

OF THE

NEPHRITIS,

OR THE

INFLAMMATION OF THE KIDNEYS.

426. THIS diſeaſe, like other internal inflammations, is always attended with pyrexia; and is eſpecially known from the region of the kidney being affected by pain, commonly obtuſe, ſometimes pungent. This pain is not increaſed by the motion of the trunk of the body, ſo much as a pain of the rheumatic kind af-

fecting the ſame region. The pain of the nephritis may be often diſtinguiſhed by its ſhooting along the courſe of the ureter; and is frequently attended with a drawing up of the teſticle, and with a numbneſs of the limb on the ſide affected; although, indeed, theſe ſymptoms moſt commonly accompany the inflammation ariſing from a calculus in the kidney or in the ureter. The nephritis is almoſt conſtantly attended with frequent vomiting, and often with coſtiveneſs and colic pains. Uſually the ſtate of the urine is changed; it is moſt commonly of a deep red colour, is voided frequently, and in ſmall quantity at a time. In more violent caſes, the urine is ſometimes colourleſs.

427. The remote cauſes of this diſeaſe may be various, as external contuſion; violent or long continued riding; ſtrains of the muſcles of the back incumbent on the kidneys; various acrids in the courſe of the circulation conveyed to the kidneys; and

perhaps ſome other internal cauſes not yet well known. The moſt frequent is that of calculous matter obſtructing the tubuli uriniferi, or calculi formed in the pelvis of the kidneys, and either ſticking there, or falling into the ureter.

428. The various event of this diſeaſe may be underſtood from what has been delivered on the ſubject of other inflammations.

429. Writers, in treating of the cure of nephritis, have commonly at the ſame time treated of the cure of the Calculus Renalis: But, though this may often produce nephritis, it is to be conſidered as a diſtinct and ſeparate diſeaſe; and what I have to offer as to the mode of treating it, muſt be reſerved to its proper place. Here I ſhall treat only of the cure of the Nephritis Vera or Idiopathica.

430. The cure of this proceeds upon the

general plan, by bleeding, external fomentation, frequent emollient glyſters, antiphlogiſtic purgatives, and the free uſe of mild and demulcent liquids *. The application of bliſters is hardly admiſſible; or, at leaſt, will require great care, to avoid any conſiderable abſorption of the cantharides †.

431.

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[*] Theſe have all been enumerated in ſome of the preceding notes.

[†] This is a very neceſſary caution. Bliſters generally affect the urinary organs and veſſels, occaſioning much irritation, and conſequently increaſing the inflammation.

As the Author is rather ſhort in his directions for the cure of this very troubleſome inflammation, it may be proper to add ſome particular directions for regulating our practice in theſe caſes.

An ulcer in the kidneys is extremely difficult to heal; we ought therefore always to attempt the cure of nephritis by reſolution. The general remedies for anſwering this intention have been frequently enumerated,

431. The Cyſtitis, or inflammation of the bladder, is ſeldom a primary diſeaſe; and

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ted, eſpecially in the notes on Art. 130. and 131. The particular remedies more peculiarly adapted to this diſeaſe are demulcent drinks of the ſofteſt nature, and ſuch as are leaſt apt to irritate the parts; as lint-ſeed tea, decoction of marſh mallows, &c. Nitre has been recommended among the general antiphlogiſtic remedies; but, in nephritis, its uſe is doubtful, on account of its paſſing quickly by the kidneys, and irritating them.

A difficulty of making water is one of the ſymptoms of this diſeaſe, and ſome practitioners recommend heating diuretics. This practice, however, is extremely hurtful, and ought to be carefully avoided, becauſe theſe warm medicines, as turpentines, balſams, &c. always increaſe the irritation, eſpecially in the urinary paſſages.

As the colon preſſes immediately on the kidneys, eſpecially on the right one, we ſhould be peculiarly careful to keep it empty, which is beſt done by glyſters. Beſide the uſe of glyſters in evacuating the contents of the colon, they act as a fomentation to the inflamed part; we ought therefore, in theſe caſes, to preſcribe them larger than uſual, and repeat them often. They ought and therefore is not to be treated of here. The treatment of it, ſo far as neceſſary to

be

ought to be extremely emollient, and void of every ingredient that is any way ſtimulating. A quart of thin barley-water or lint-ſeed tea anſwers the purpoſe as completely as any of the more compound emollient glyſters of the Pharmacopœias.

With reſpect to diet and regimen, we may obſerve that lenient nouriſhment is highly proper; for every thing acrid naturally forces itſelf off by the urine, and conſequently increaſes the irritation. A total abſtinence from food is by no means adviſeable, becauſe, from abſtinence, little urine is ſecreted, and the ſmaller the quantity ſecreted it is generally the more acrid, and conſequently noxious.

The patient ought to be made to ſit up as much as poſſible Warm ſoft beds, which are always improper in all inflammatory diſeaſes, are peculiarly hurtful in nephritis, eſpecially if the patient lies on his back; for in this poſition the kidneys are kept very warm, and are at the ſame time preſſed by the ſuperincumbent weight of the abdominal viſcera, all which will contribute to increaſe the inflammation. Although lying much in bed be diſapproved, the patient ought by no means to be explained, may be readily underſtood from what has been already delivered.

432. Of the viſceral inflammations, there remains to be conſidered the inflammation of the uterus: But I omit it here, becauſe the conſideration of it cannot be ſeparated from that of the diſeaſes of child-bearing women.

be over fatigued with ſitting too long. The room ſhould be moderately cool, and the bed ſpringy, but not ſoft.

In addition to what was ſaid above reſpecting bliſters in this diſeaſe, it may be neceſſary to obſerve, that other veſicants beſides cantharides may be uſed, ſuch as muſtard poultices, commonly called ſinapiſms, a poultice of the freſh leaves of the ranunculus acris, and other acrid plants.

END OF THE FIRST VOLUME.